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Oric Suftware

More listings 🚻 fOr: Spectrum, Dragon, BBC, VIC-20, ZX81

PLUS: U.S. Scene, letters, iews, One Man's View ...

ITV micro

NEW OCCUPANT SECURE OF

Most of the independent TV companies had mixed feelings about plans for an ITV micro and many of them are relieved that the idea has been dropped.

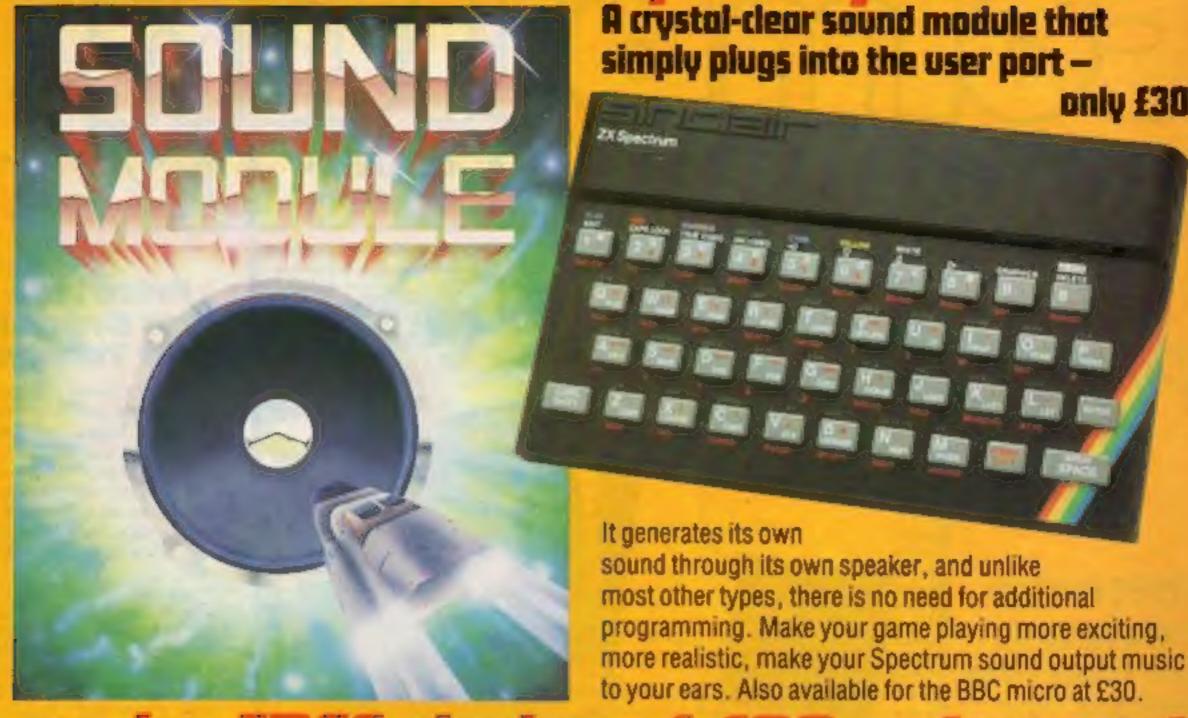
After consultations with the Independent TV Companies Association, the Independent Broadcasting Authority decided that the planned micro might breach the Broadcasting Act. which governs ITV but not the BBC.

Section 8 of the Broadcasting Act stresses that adverts should be kept separate from programme material. And conflicts with advertisers could have arisen if the LTV had decided to sponsor one particular brand of micro.

Spokesmen for some of the independent TV companies felt that a special ITV micro would have interfered with their existing

Continued on page 5

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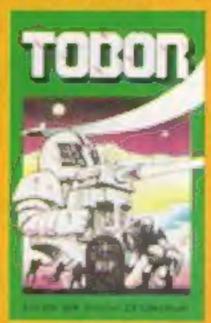
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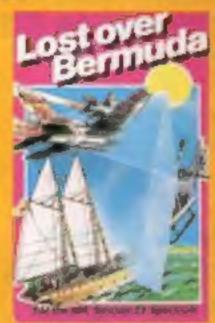
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only £30

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Terminal Software, purveyors of programs for the Commodore 64 and VIC-20, have now launched their first two programs for the Spectrum. They are Vampire Village and Space Island, and Terminal describes them as "real-time graphic adventures." They cost £6.95 each.

Terminal Software, 28 Church Lune, Presiwich, Manchester M25 5AJ

This monitor stand for the BBC micro and similar computers is made from quarter-inch thick tinted perspex by Camel Products. It measures 17in by 12in by 3¼ and costs £19.50, plus VAT and postage.

Cambridge Microelectronics, 1 Milton Road, Cambridge CB4 IUY

Zarm, Martian Attack and Cybertron are Micro Power's three new titles for the Electron and BBC micro, priced at £7.95 each. Micro Power is also converting most of its range to run on the Electron, including its best-selling Killer Gorilla, Prices will range from £6.95 to £9.95.

Micro Power, Northwood House, North Street, Leeds LS7 2AA

The Joy of Computers is a new book which, with illustrations, diagrams and colour photos tries to convey the fun of computing. It's written by Peter Laurie, exeditor of Practical Computing and costs £9.95 in hardback. From most bookshops, or by post for an extra £1.85.

Southdata, 166 Portobello Road, London W11 2EB

All the family can learn with two new programs from Sulis Software. Time Traveller, for the 48K Spectrum and BBC, aims to test your knowledge of British history from the Bronze Age to the present day. Besieged, for the BBC only, is a spelling program in which you try to get a knight on horseback across a ravine by spelling jumbled words to build a bridge. Versions for other machines are coming soon. Price: £9.95 each.

Sulis Software, 4 Church Street, Abbey GReen, Bath BAI INL

Chome Computer of the Computer

Mews, one man's view
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Letters
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To advertise your latest products! Ring Coleen or Barry on 01-437 1002 NOW!



There's eight pages of software reviews in this issue — that's a total of 40 programs tested for you. We review more software than any other magazine



Bash the brickwork with the game on page 19 — it packs a lot into the unexpanded VIC-20



Type in and have fun with the BBC game on pages 26 and 27 — it's so furiously simple....



Stay up to date with the 16K ZX81 program on pages 40 and 41 LUNAR JETMAN—For the 48K Sinclair ZX Spectrum LUNAR JETMAN—The Ultimate Intergalactic G.A.S. (Graphic Arcade Simulation) Adventure Space Battle

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Pust Code

NEWS

Price row

From front page

decided to lose £30 per machine. We are committed to providing full support and we also want to be here tomorrow.

"Many people think it's a licence to print money. It will be interesting to see how many manufacturers are around in the New Year."

Dragon's sales boss Richard Wadman, told of Mr Soble's comments, said: "It's a load of rubbish. The re-financing has got nothing to do with it. There's no relation. It was due to the fact that when we started we had 40 staff and now we have six times that amount and a major development programme.

"Obviously, as a manufacturer, I would like to see a higher !

price - but the market place doesn't."

Tandy's new models, made in Korea, are a 16K version, 16K with Extended BASIC and 32K. or 64K with a 514 in disc drive which also adds Tandy's OS/9 disc operating system. The circuit board has also been re-designed.

All present software and peripherals will work on the new micros, except Tandy's graphics pad.

Meanwhile, Dragon is planning to bring out a computer aimed at businesses in February/ March, followed by a 128K Dragon.

Tandy, Tameway Tower, Bridge Street, Walsall, West Midlands WSI ILA

Dragon Dato, Kenfig Industrial Estate, Margam, Port Talbot, West Glamorgan SA13 2PE

Cutting idea for a Dragon

So who says home computers can't do anything useful? Seventeen year old Stephen Hurcombe proved them wrong with his prize winning entry for the Microquest competition run by Williams and Glyns and the Mocroelectronics Application Project.

Stephen's entry, which used a Dragon 32 to control a mortice cutter, has a very real use in streamlining manufacture of storm porches at his father's joinery business.

tronics partly through home computing on his Dragon, and partly through work experience as an apprentice with British Telecom, at the Madley satellite earth station.

As national Microquest winner, Stephen was awarded £1,000. He also received £250 as the Midlands regional winner, and plans to use the money to buy more computer equipment,

One thing he won't have to buy is disc drives — Dragon Data has already presented him with a disc system.

Now Stephen is hoping that, with the help of MAP, his idea He learned about microelec- may be developed commercially.

ITV micro

From front page

plans for home computer programmes.

Roy Addison, of Thames TV, said "On one hand, it's a pity that the BBC can bring out a micro and we can't. On the other hand, we have an independent educational programme about the world of computers, called Data Base, which covers all kinds of micros, so we were quite worried about the IBA's reaction."

Data Base, which was broadcast in the London area only last year, will be coming back during 1984.

Adam Hart-David, who is producing a computer programme for Yorkshire TV, said: "An ITV micro would have had advantages and disadvantages. But to try and cram all the different ITV companies' wants into one machine would have been quite difficult:

"For example, at Yorkshire TV we're trying to make a simple little programme for home computer users. If we'd been lumbered with an expensive ITV micro. I'd have been very unhappy."

Mr Hart-Davis is working on a series of four or five programmes which should start to appear on viewers' screens nationwide in June. The aim of the series will be to encourage people to write their own programs.

The series will concentrate on two microcomputers, both costing less than £250, one of which is likely to be the Spectrum. It will be presented by Fred Harris, best known for his appearances on Play School.

Describing the series, Mr Hart-Davis said: "We want it to be educationally sound, but fun too. The most exciting thing about computing is when your first | £1.50.

program runs, and that's what we want to get across."

He is also on the lookout for people who do odd things with micros, and said: "if any of your readers fit the bill, tell them to get in touch with me."

Tommy Boyd, who along with Isla Sinclair presents Central TV's Saturday Show, said: "There are too many types of computer anyway - it will be better when they are all standardised. We want to concentrate on using micros to make entertaining programmes."

The Saturday Show has a regular computer spot called Interface. From 7 January it will be starting a Fairground of the Future, in which viewers control a robot arm via a computer modem link from their own homes, and try to pick up prizes from a turntable.

Interface is co-presented by Tommy Boyd and technical expert Chris Palmer.

London Weekend Television is also actively pursuing the idea of making its own home computer programme, It's currently discussing proposals which should become public in a few weeks.

Stephen Hurcombe with his prize-winning Dragon project

New show date

The organisers of the London Home Computer Show have decided to re-schedule the exhibition, because many potential exhibitors wish to attend the Las Vegas computer show at the same time.

The London show has been postponed for a month and will now take place in the Royal Horticultural Society's Old Hall, Vincent Square, Westminster, London, on February 3-5. Admission: £2.50, children under 15

Split-level stand

Zygon has come up with another variation on the computer stand theme.

lis stand uses a two-tier arrangement, with the computer on a lower shelf which slides away when not in use. The screen is set back on a higher shelf, and side shelves hold disc drives and other peripheral equipment.

The whole stand will wheel out of sight on double castors, and there's even a brake to prevent your hobby running away with you. Price: £106.08.

Zygon, 9 Sheredes Drive, Hoddesdon, Herts EN11 8LH



Rolling storage for your micro from Zygon

Home Computing Weekly is one of the magazines that sponsors the London Home Computer Show.

Argus Specialist Exhibitions, Wolsey House, Wolsey Road, Hemel Hempstead, Herts HP2 455

Tuppence more

Rising costs have forced us to put up the price of your Home Computing Weekly by two pence. But we are sure you'll agree that the 40p HCW is just as good value.

Quick on the

Software company Audiogenic has now moved into peripherals with Koala Painter, a £90 graphics tablet for the Commodore 64 plus discs.

Graphics tablets allow onscreen pictures to be produced without the need for programming knowledge, by drawing with a special stylus on an electronic pad.

Koala Painter, so called because it is made by the Koala Technologies Corp of Santa Clara, California, is controlled by a disc-based program which allows you to draw in eight line widths. 16 colours and 16 patterns.

You can undo a previous command to correct mistakes, copy picture elements, create mirror images and zoom in for detailed drawings.

To select any of these features, you press one of the Koala's buttons to get to the menu. Press the button again to choose the option you want, and another button press returns you to drawing mode.

Koala Painter measures eight inches by six inches by one inch.

and weighs just one pound. The graphics pad surface is four inches square.

Audiogenic, PO Box 88, Reading, Berks RGI 2SN



The Koala Painter from Audiogenic — graphics at your fingertips

It's a no-lose situation

In HCW 38, this column was devoted to a complaint from "an anonymous software house" complaining of "blackmail" from "the few big distributors" who "demand that they buy programs at 60% margins".

"Is the man mad?" I ask myself. "Has he not observed the transformation of the software market that has taken place in the last 12 months? Can he not see that this is to the advantage of both his company and to would-be purchasers of his software? Is he not pleased that today the consumer can walk into any town in the country and find a shop selling good quality software attractively packaged and presented and retailing at an acceptable price?".

It would be wrong to place all the credit for this situation with the various distributors of computer software, but there can be no doubt that they have played an important part.

Let me take an example. This morning, my company received an order from one of our distributors for 4,000 copies of 3D Seiddab Attack, our new Spectrum cassette.

For an order of this size, we willingly allow the distributor a discount in the region of 60%. We do so because the distributor is providing a service to the public which we could not equal, let alone surpass.

He is also serving us by arranging that copies of the cassette will be available in hundreds of retailers up and down the country on the launch date — 17 December. When the general public sees our advertisement, or reads the first independent reviews, the cassette will be available at a convenient local outlet.

Contrast this arrangement with the situation of a year ago, when the potential purchaser had either to search out one of the small number of specialist computer shops, or to entrust his money to the vagaries of the postal system.

There are other benefits to both the distributor and to ourselves in this arrangement. We know that he will settle our bills on time and he knows that we will deliver our software on schedule because we both wish to continue a mutually profitable trading relationship in the future.

He also gets to know the style and quality of our software and learns that we will only offer him reliable products which he can readily sell.

Retailers also benefit. They need not run 20 or 30 accounts with a variety of software houses, each of which requires telephone calls, paperwork and, in some cases, time consuming and expensive weeding out of poor cassettes.

Finally, the public also benefit. They can buy their software from the local newsagents, hi-fi shop, camera shop, computer shop, chemist or supermarket, and can be confident that the selection is of good quality and will contain all the latest releases.

Surely this is preferable to the unseemly mail order scramble of a year ago? I know that the hundreds of thousands of purchasers of our software certainly think so — our mail order sales now represent a tiny fraction of our total turnover. I think so, too. We can now concentrate all our energies on what we do best — creating, packaging and presenting top quality, value for money software.

The only losers in this market are the software houses which cannot deliver good material. I for one will not mourn their demise.

Andrew Hewson Hewson Consultants Wallingford, Oxfordshire

This space is for you to sound off about the micro scene, to present bouquets or to burl brickbats. Share your views by sending them to Paul Liptrot, Opinion, Home Computing Weekly, I Golden Square, London WIR 3AB. Please include your occupation and your interest in computing.

You could be on our pages

We welcome programs, articles and tips from our readers.

PROGRAMS must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers made better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, No.1 Golden Square, London W1R 3AB



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I'm in Shock Spectrum E4.95

Artic, Main Street, Brandesburton, Driffield YO25 8RL

Why am I in shock? Well. wouldn't you be if you'd been away fighting aliens only to find it was all a decoy, and the earth had been taken over in your absence?

You find yourself on a grid, with some static triangles that deflect your shots. This makes killing the aliens quite an art even though they are pretty docile.

On level 5 they speed up and fire indiscriminately.

The sound, a fast throbbing noise, is good and the effect of the screen flashing white when a triangle is hit is excellent.

The game is let down badly by the poor graphics and the lack of

variety of aliens - there are only three types.

It's difficult to position your ship in a particular column because the keys are overresponsive. One touch and you move three or four spaces. However, it is a logical choice of keys.

I doubt the game's lasting appeal, even with the different skill levels, because it can become monotonous. But it's certainly fun to play for a while.

instructions	60%
playability	65%
graphics	35%
value for money	60%



In an alien situation

More programs to fill your TV screen with hostile space creatures. Our reviewers battled through them to give you their ratings

Proteons 32K BBC £6.95

dk'tronics. Shire Hill Industrial Estate, Saffron Waldon, Essex

You control the usual laser gun which is under constant attack by waves of enemy aliens, which move around in a random (ashion

rather than the strict formation of Space Invaders.

These are some of the fastestmoving aliens I've experienced. There are no less than 36 waves of them, each wave increasing in difficulty and speed, and they appear in nine different forms.

Choice of control keys is good, being equally suitable for left or right handed players (other soft-

ware writers please note). Unfortunately, the author has not given the option to use joysticks, which is a pity.

Instructions are displayed while the main program is loading, and a high scores table is provided. I particularly liked the way that the screen scrolls from the end of the game into the high

Excellent use is made of the Beeb's sound and graphics

facilities. If you like the fast moving, noisy areade games, you'll like this.

90% instructions playability 80% graphics 90% 85% value for money



Spectron **48K Spectrum** 25.95

Virgin Games, 61/63 Portobello Road, London WII

According to the blurb, this is a game which can never be beaten no matter how proficient you become. If that is indeed the case, what is the point of playing it?

The game is another version of Space Invaders. This time, you are in the centre of the screen being attacked from all sides by the monsters.

Keys Q.A.B and v or a combination of two of them, allow you to move in eight directions, firing in the direction you travel. This does cut down the number of keys you need to use.

In all, this is a rather standard game despite the nine skill levels. I feel that better use could have been made of colour, especially in the instructions, which look quite drab in black and white.

Movement of the characters is very smooth, however and the game is up to the standards of this type of game - competent but uninspiring. N.B.

instructions	80%
playability	80%
graphics	70%
value for money	75%



Stix **CBM 64 E8.95**

Supersoft, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex

It doesn't take much thought to realise that this is a copy of an Atari game of similar sounding name. Unlike most copies, however, this game is superb.

An alien bundle of energy resembling a bundle of sticks moves about the screen. You try to pen it in by drawing a line about it with a force field.

As you complete the perimeter, the area outside the field is filled with colour. You must not pause whilst forming the force field or a 'ripple' will come and get you.

Similarly two quarks creep about trying to jump on you. When you've covered at least

76% of the screen you get a new

With each new screen the alien and the quarks become meaner and go for the throat with increased alacrity. In fact, after about six screens, life becomes positively impossible.

The game uses the bit mapped mode and is beautifully programmed. My only complaints were the lack of a high score display and the tack of clarity of

If you have a 64, you must get the score. Stix. It shows what a real game is like-

900% instructions playability graphics value for money



Arena/Allen Swarm Spectrum £6.95

K-Tel, 620 Western Avenue, London W3

"You are a captive of a warlike alien race... you are in the arena... you will have comets, lazer bolts and lazer spears shot at

you..." it says here.

Which is an interesting description of a little spaceman. stuck in the middle of a rectangle, being bombarded by amorphous blobs of colour to the sound of random bleeps.

The instructions also tell you to keep away from the side spikes of the "arena". They're supposed to be deadly, but my spaceman wouldn't go near them.

And they're supposed to move in as time goes on, but mine

appeared to be frightened and kept running back.

To be fair, you can define the movement keys - every time you start (yawn!). And you can adjust the speed and difficulty from geriatric to impossible.

The problem here is that the easiest level is 9 and the hardest is I, which by convention is back to front. The graphics are jerky and the sound is rudimentary.

The concept of the game is quite good, and if you like it, go out and buy Zip Zap from Imagine, because this just doesn't bear comparison.

Sold as a double-game along. D.M. with Alien Swarm.

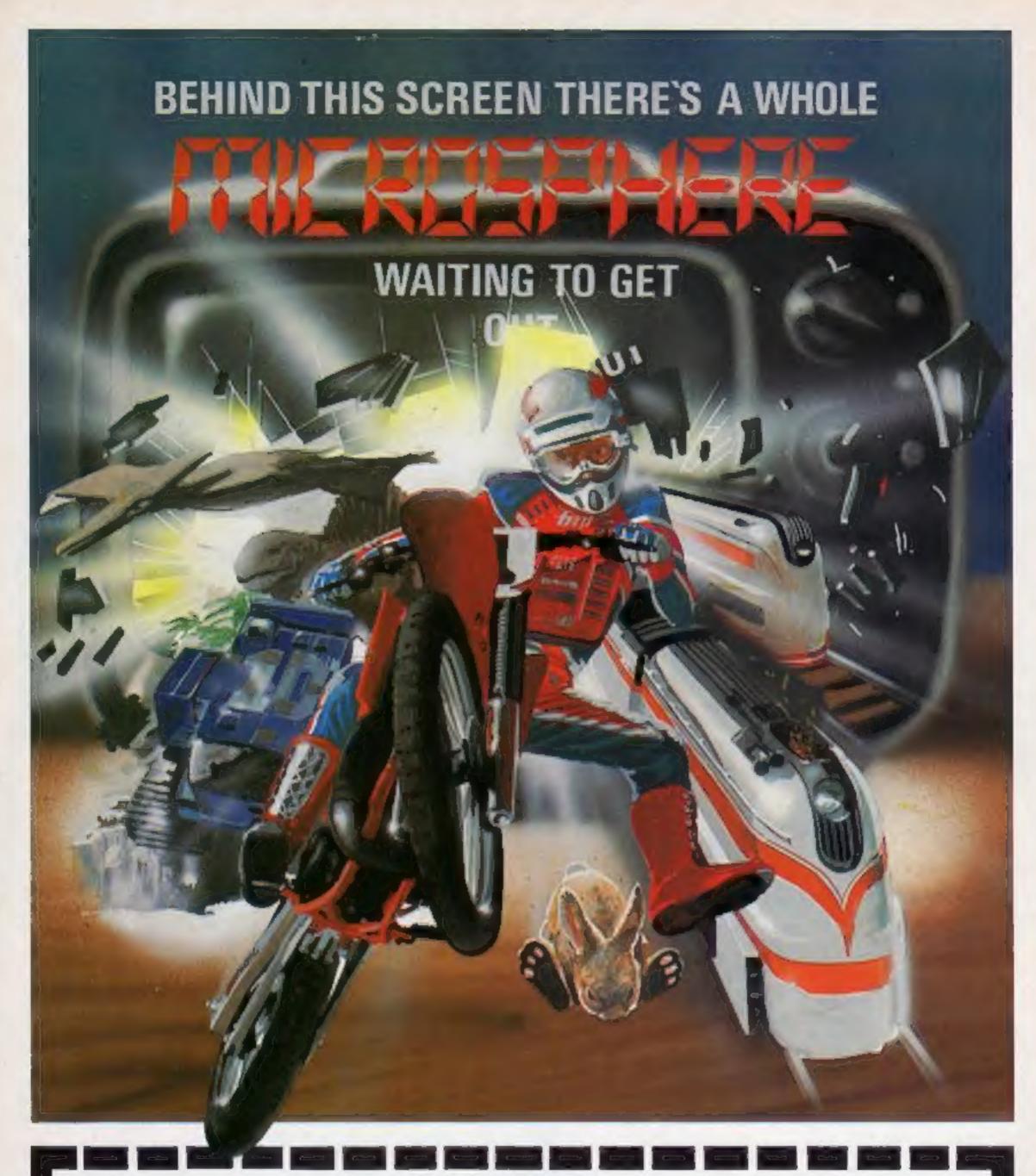
95% instructions 60% playability 20% graphics 30% value for money



850%

90%

90%



* WNEELIE (48K Spectrum)

As proud owner of the ultimate racing motorbike, you find yourself in a strange world — a world full of double-decker buses to leap and where even the hedgehogs are out to get youl Your only hope of escape is to find the elusive ghostrider and then beat him in a life-or-death race.

100% machine-code action, keyboard and joystick options, demonstration-mode, and smazing graphics combine to make WHEELIE one of THE games for 1984....only £5.95

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games; irate passengers; collisions derailments; and everything else you'd expect from a major railway! just £5.95
"... an excellent game which is

original, well thought-out and full of action" (S. User Nov 83)

"Fun, fun, fun to play . . . (Home Computing Weekly 27/9/83)

CBM 84 and BBC owners — WHEELIE and THE TRAIN GAME will soon be ready for your micros.

Items marked * are available from selected branches of



OMNICALC (48K Spectrum)

The best Spectrum apreadsheet you can buy. Written in machine code, to be faster, to give you more space for data, and to include more features, it is guaranteed uncrashable. Complete with comprehensive manual 29.95

"If more programs shared the quality of OMNICALC then we might see more Spectrums in offices" (Home Computing Weekly 3/8/83)

EVOLUTION (48K Spectrum)

Meet Tyrannosaurus Rex. Podopteryx, Brontosaurus and many more fascinating creatures on the journey from the start of life to man. See 3500 million years of evolution compressed into half an hour £6.95

Available at good computer shops everywhere, or by mail order from MICROSPHERE, 72, Rosebery Road, London N10 2LA (Tel: 01-883 9411)

Get that sprite right

My Sprite Editor program helps you to get the most out of your Commodore 64's sprite facilities

It makes it easy to first draw your sprite on the screen, and then see it in four different modes expanded, normal, expanded in X direction and expanded in Y direction

To move about, use the normal cursor keys plus colon, semicolon, full stop and stash

You can be in one of three modes:

Mode 1 press 1 — you will start printing as you move

How it works

10-50 sets variables, prints

60-190 reads keys pressed, takes appropriate action

500-1170 converts screen display into decumal code for sprites 1190-1200 pokes sprate data into

memory 5000-5010 clears screen when A is pressed

5500 prints data

5510 either prints last screen picture or runs the program BRAID

Playing about with sprites is a piece of cake when you use Tony Kelly's Sprite Editor program. A few keys let you change your sprite's size, shape and colour

Mode 2 press 2 you can move without deleting anything

Mode 3 press 3 — you will delete. the square you are on and any other you move to. The other functions are

Main variables

W\$ (21,24) holds screen picture

F(62) holds sprite data

A 2 6 3 6 3 1

Press Q to change the colour of the sprite to anything but black

Press A you will be confronted by "are you sure?" This was put in because I found I some-

times pressed the wrong key and cleared the screen by mistake You must reply with either Y or N N will return straight away Y will clear the screen and then return

Press 5 this must be pressed after S if you want the data for the sprite you have on the right hand side of the screen. Pressing D will print the data, then wan for a key to be pressed

Press R to return to the sprite draw and clear screen. If you press any other key, the program will print your picture back on the screen.



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Children of today are lascinated by computers. With micros already used in schools throughout the country their involvement in education and in our daily lives is increasing all the time

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Af this age less parental help and guidance are necessary. Your child will nontrinually be seeking new experiences and will enjoy his/her mind being challenged. Clever Clogs satisfies both criteria.

Correct answers to guestions boild up a picture of an animal like if a rear one? That is up to the player ?ake your choice and create your own. unique too. Then enter the great Safavi Park chase. The possibilities are endless.

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Zap while you learn... but be quick about it

How It works

- 15 sets BORDER colour
- 20 GOSUB to assign variables
- 40 GOTO instructions
- 45 GOTO subroutine to define LFO
- 60 start
- 62 initialise value of ct. number of times LFO has crossed screen
- 65 clear screen
- 70 read DATA
- 90-110 PRINT question, choices of answer
- 115 set initial position of UFO 118 magenta for UFO
- 120 PRINT UFO. Note: ob tained by typing PQR in graphics mode
- 125 noise
- 126-140 PRINTs gun and score in black
- 150 if correct GOTO fire routine. 160 if incorrect, give correct answer
- 170 new UFO position, check it. at edge, increase or by one erase LFO, restore to initial
- 175 has UFO crossed 10 times? It so give answer
- 180 move UFO
- 185 clear screen
- 190 next question
- 200-211 clear screen, give result 220 end
- 1000 set initial value of score
- 1010-1020 initial bullet co-ordin
- 1030 initial value of ci-
- 1090-1094, 2000-2950 DATA for UFO, questions and answers 3000-3092 instructions
- 3093-3096 if s is pressed return to
- 4000-4003 PRINT "correct increase and PRINT score
- 4010-4035 move bullet
- 4040-4070 check for hit, miss etc.
- 4075 delay
- 4080 next question
- 5000-5020 give correct answer delay, next question
- 7000-7040 define characters for LFO
- 8010-8030 noise, tell player is too slow, give answer, delay, next question

Variables

- I number of questions
- et number of times UFO crosses
- II target line
- te target column
- sc score
- bil bullet line
- be bullet column
- y check if s (start) pressed
- d, f, g delays
- n. a used in defining graphics

The answers

3 b 5 c 2 d 4a 1 a 7 d 8 c 9 a **6** d 10 b

Space games can be educational, too. Gerard Morgan proves it with his Physics Invaders game for the Spectrum. And it's easy to change the quiz questions for other subjects



Have fun while you're learning with Physics Invaders, which combines education with play

Every time you get the answer right you can gain bonus points by shooting a UFO

Although I have used questions on physics, it is a simple matter to change the DATA in lines 2000-2950 to any other topic. It could be Sport Invaders, General knowledge Invaders, and so on

Each time a question is asked tour choices of answer are given - a, b, c or d

While waiting for an answer, a UFO flies across the screen above a gun. The trigger is the key for the correct answer

A correct answer earns 10 points and there's a bonus of another 10 for a had

If you take too long too answer time for the UFO to cross the screen 10 times - a "too slow" message appears and you lose the change to score on that question

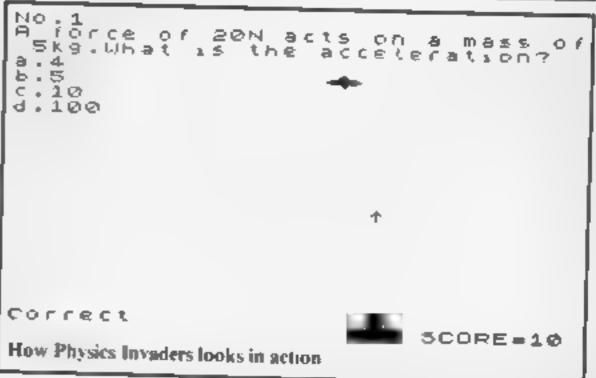
Your score is given after all 10 questions.

REM PHYSICS INVADERS MORGAN 1983 BORDER 4 GO 308 1000 40 GO SUB 3000 45 GO SUB 7000 50 REM START 60 FOR t=1 TO 10 SUB REM TITLES REM draw UFO CLS ct=0 65 READ as, bs, cs, ds, es, fs, gs, h 70 80 90 PRINT "No. 100 PRINT 西事, 日本, 日本 PRINT 110 e \$ PRINT PRINT PRINT 9 115 LET t L =4 LET INK tc=10 118 120 PRINT AT. ttite 1 128 BEEP .01,1 BEEP .01 10 126 INK 127 PRINT 21.23, 5CORE = AT 130 PRINT AT 140 PRINT AT Z0,20,' 150 INKEY \$ = 1 \$ THEN GO TO REM FIRING 160 IF INFEARY THEN GO TO REED BILLD IMMENACOS PEM EXPAIN 上四下 t C = t C + 1 IF tc=30 ct=ct+2 PRINT AT LE 4,29 t C = 10 175 IF C1=10 THEN GO TO 8000 GO TO 118 180 185 CLS 190 NEXT 200 CLS 210 OUT OF A PRINT Ø, YOU SCORED 5 C211 PRINT AT 11,8, POSSIBLE 200

SPECTRUM PROGRAM

```
220 STOP
1000 LET <<=0
      LET
1010
          b =19
      LET bosão
1050
      LET ct ≃ Ø
1030
      RETURN
1040
      DATA 0,0,0,7,15,7,0,0
1090
      DATA 0,24,60,255,255,255 28
1092
1094 DATH 0.0.0,192.240,192,0,0
2000
     DATA A force of 20N acts o
n a mass of"
2010 DATA
              Bkg. What is the acce
Leration?"
               .' ,"a.4"
2030 DATA
                              b , 5 , 1 c
710" 73,100'
2040 [ATA '3' '4"
2100 DATA Water waves have a fr
edneuch ot.,
2110 DATA
              SHz and a wavelength
    Om . What
 OF
2120 DATA ' is their speed?"
                             c . 75
2170 DATA "a.3 'b.330'."
d.15'
2140>DATH "d","15"
2200 DATH "Which electromagnetic
 radiation
            "has a frequency great
2210 DATA
   than
2220 DATA " light but less the n x-rays " " 2230 DATA "a.Gamma", "b.Ultra-v.o
let
2240 DATA "c.Infra-red" "d.Radio
OBVES? *
BERO DATA "b", "Ultra-violet"
     DATE
           "The Units of specific
2300
 tatent
2310 DATA "
                heat are:
Prepare "An aleha particle is
      DATA "
2402
2404 DATA ...
2406 DATA "
2410 DATA "a.An electron", "b.A H
€ . : Um _atom™
2420 DATA
            "c.A Helium nucleus","
d.A Wave"
      DATA "c", A Helium mucleus"
DATA "5#2500J/kg/k, M=2kg, In
2430 DATA
2500
 tial
      "我也有应一"
2510
      DATA "erature=298k, finat
     DATA "temperature = 313K.Ene
2520
2540 DATA "a.300
2540 DATA "a.300
500J", "d.75000J"
500J", "d.75000J"
            "a.300 / 'b.50000 /
                                 C.7
      DATA "The melting point of
      100 15
pure
2610 DATA
2620 DATA "
2630 DATA
2640 DATA a.-373K","b.-273K
.100K"."d.273K"
2650 DATA "d", "273K"
2700 DATA "Kinetic energy
                              1.5
                                  EQU
al to"
2710 DATA
2720 DATA_
2730 DATA
2740 DATA
            a.mv ', "b.mgh"
                            J"C. (MVV
      "d. (mgh) /2
DATA 'c"," (mvv) /2'
2750 DATA
2800 DATA
             Resistance is measure
 " r ⊔ ,
8
2810 DATA
SSSS DELE
2830 DATA
2840 DATA "a.Ohms","6.Watts"
AMPS"
      ,"d.Volts
2850 DATA "a", Ohms
2900 DATA Which equation is fal
50
```

```
2910 DATA
  2920 DATA
  2930 DATA
 2940 DATA 'a.F=ma
                         b.v=s+at ,'c
  .V=IR", d.V=E / Q
  2950 DATA
              'b , Westat"
  SOOO REM INSTRUCTIONS
  3010 PRINT AT 1,7, "PHYSICS INVAD
 ERS
 THING 0200
                 PRINT
                         YOU Wile be
 asked 10 multiple
  3030 PRINT
                 PRINT
                         choice quest
 agns, whate a
                UFO
 3040 FRINT
                 FRINT
                         flaes overhe
 a d
 SORO PRINT
                PRINT
                         If you answe
   the question
 3000 PRINT
                PRINT
                         correctly, a
 butlet will
               fice
  070 PRINT
               PRINT
                         from your go
       time your
  50
  080 PRINT
                PRINT
                         answer to be
   the UFO as you
 BOSO PRINT
                       'gain 10 bonu
                PHINT
 BOST PRINTOR
                PRINT
                        'A correct
 swer#10 Foints,
                                    40
 THIRS SEQU
                PRINT
                        Press
                                1 8 1
                                    to
  Start
 3093 LET 9=0
 3094 IF INKE, so's" THEN LET 9=1
 3095 IF 9=0 THEN GO TO 3094
 3046 RETURN
 4000 PRINT AT 20,0; "Correct": LE
   S C = S C + 10
 4001
      FRINT
             AT 21,23; "SCORE="; sc
 4003
      BEEP
           bi=19
      LET
 4006
4010
      LET
           b(=b(-1
 4030
      PRINT
             AT
                 ウリックロアリナリ
4035
      PRINT AT
                 bt+1,bc;" "
4040
          tc=18 AND 61=4 OR tc=19
      IF
AND BLE4 OR TC = 20 AND BLE4 FRINT AT 4, 18; "HIT AND BLE4 OR T
                                THEN
                     bl=4 OR tc=19
AND bled OR tca20 AND
                          b1=4
                                THEN
CET
    3 C = S C + 10
4050 IF BLEA AND to 18 OR BLOA A
4070 IF bl ()4 THEN GO TO 4010
4075 FOR d=1 TO 200. NEXT d
4080 GO TO 185
5000
      PRINT AT 20 0; "Wrong.";
SOLO PRINT
             "The correct answer w
a 8
5012
5012 PPINT "1 TO 500 NEXT 1
7000 REM UFO
7010 FOR 1 40 TO 7
U R "P +n a: NEXT n
7020 FOR N=0 TO 7: READ a.
                     READ a: POKE
                                POKE
7030 FOR #=0
               TO 7: READ a: POKE
USR "r +n.a.
               NEXT n
7040
      PETUPN
8000
      PEM
8010 BEEP 2,15; FRINT AT 10,0; "T
00 S LOW! The answer is 111 8020 FOR 9=1 TO 500 NEXT
                         W: 1 $
```



SOFTWARE REVIEWS

Arcade favourites to take oway

There's a familiar sound to this collection of games — it's the sound of the arcades, ready to fill your living room

Krazy Kong **48K Spectrum** £5.95

PSS, 452 Stoney Stanton Road, Coventry

The aim, of course, is to rescue Jane from the evil gorilla. To do this you must get to the top of four different screens and then kong should fall - although I'll

have to take PSS's word for that

There are numerous hazards including barrels, which have the nasty habit of falling on you when you least expect it, plus fireballs. conveyor belts, flans, and what took like flying tin cans. There are affis on the higher levels

To cap it all your bonus depends on the time you take too long and you lose a life. Bonus points can be gained for picking up water buckets.

Kong TI-99/4A (EXt. BASIC) pius joysticks

Extended Software, from Timeless Software, 3 Bridgend, Fauldhouse, West Lothian

The first thing that hits you about this game is the packaging — American, and very professional

The package was described as Games Pak/III, supposedly consisting of three programs, Kong. Bouncer, and Romeo, but only Kong was supplied for the price. I wondered if the original package had been broken down into three separate packages, and if so. why?

Anyway, the game is a moderately-good version of the gorillabased Donkey Kong, requiring

joysticks to work and thus likely to fall foul of the alphalock key

The documentation is very good indeed; two sheets of instructions and a publicity burb.

One sheet is given over to instructions for loading from cassette, even suggesting solutions to loading difficulties in some detail

The second sheet is an equallydetailed discussion on playing the game, offering strategic suggestions.

The program is announced on tape using the Terminal Emulator [1], of interest to those working on text-to-speech algorithms. PB

instructions	95%
playability	80%
graphics	80%
value for money	55%



The animation of the man is excellent, the legs actually appear to move properly, it's even interesting just to watch him jump

You can use a Kempston joystick or keys 1-5, which have been chosen for compatability with Interface 2

So far I've found it impossible 10 get past the second screen, although it has been done, so this shouldn't be a game that gets

mastered too easily its difficulty could be offputting, though.

5.E.

structions	80%
ayability	68%
aphies	70%
lue for money	69%
	_



Rong TI-99/4A ES

Staintess Software, 10 Alstone Road, Stockport, Cheshire SK4 5AH

The gorilia has got the girl, and you must rescue her.

You would think that she would be more careful after that business in New York, but no

No sooner is she rescued than she's caught again, and you repeat the performance scoring 100 points for each successful

Avoid barrels thrown by Kong and holes in the floor which you

can jump across.

I found this game to be quite enjoyable and relaxing to play, since there is no time limit involved. Even so, it was difficult to reach high scores - those barreis can be tricky!

The screen presentation is neat, with pleasing use of sound. The game can be played using keyboard or joysticks

One minor annoyance is the need to use ENTER when responding to the instructions prompt - this can be avoided simply by changing the INPUT statement to a CALL KEY routine - but that is my only quibble, in all other respects this program functions well, loading easily and apparently bug free

distructions. 10000 100° a playability 9570 graphics 9500

value for money

Hopper Spectrum £5.95

PSS, 452 Stoney Stanton Road, Covenury

Pilot Fergus the Frog across a busy road, hop across a river on the back of turtles and logs on to a Invpad

The highway has six lanes with varying traffic speeds. Once this has been crossed you must avoid a train before hopping across the

You must be wary of the turtles diving under water - which can be very annoying

The "hlypads" appear to be river inlets - the first time 1 jumped on to the forest only to hear the Death March, which wasn't too encouraging'

You have a choice of kempston poystick of two sets of control

keys - the cursor keys or a more logical arrangement. At first it's difficult to control Fergus because he moves two spaces at a time if you press the key for too long - a deficate touch is needed

The game is livened up by a tew different times and the odd muted croak from Fergus. If Fergus oles on the road an ambulance

Hopper gets more difficult when all four lilypads are filled. This game can be highly recommended.

7500 instructions 75000 playability 65% graphics 6500 value for money

cruncher 32K BBC £7.95

Virgin Games, 61/63 Portobello Road, London W11

This game is a rather poor copy of the arcade game Checkman

The aim is to defuse time bombs before they explode. To do so you have to simply wark over them (the very last thing I would

advise in 'real' life).

if you can contrive to pass through various flags on the way. you score extra points

Meanwhile you are being pursued by bovver boots intent on stamping you out

The game is fairly good, but does seem a little unresponsive until you get used to it

The animation routine is very interesting as the 'robot' turns his back on you to walk away.

Unfortunately it misses many features of the original - particularly a steady increase in speed and bonus screens. These would have held the attention for longer and added that little extra that this game certainly needs

It is by no means bad, but it isn't up to the standard of Program Power's Danger UXB by any means. Do see both before you choose.

DC.

80%

instructions playability graphics value for money

60% 70% 60%



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SOFTWARE REVIEWS

All good, clean fun

If you're feeling bad about zapping all those poor aliens, here's a selection of more peaceful programs, tested for you by our reviewers

Atom Smasher BBC £6.99

Romik, 272 Argyll Avenue, Slough, Berks

Romik's policy of including a screen picture of the game on the cassette insert is a good one

in this case, however, the picture is from the VIC-20 version, from which this was adapted, and although the dif ferences are slight there is not much in either the picture or the game to get excited about

The tape loaded perfectly to reveal this scenario; a reactor is melting down and you must delay it Shut down is impossible

Use your laser cannon to fire at a yellow proton which revolves inside a central neutron

Every time you hit it a blue electron is released. These move quite quickly and if you hit one with your laser they speed up even more for a short while

if one of them hits your laser you lose one of your three lives

In play, the electrons move so quickly that once eight or ten appear you have little hope of avoiding them. There is a joystick option and nine skill levels

Most games have standardised on the use of the Z, X, : and / keys for movement. Why not this one?

This program may have been lapped up when there was little software available, but I doubt if it will attract many games players

instructions	90**
playability	25%
graphics	50%
value for money	20%

Plankwalk 32K BBC £7.95

Virgin Games, 61/63 Portobelio Road, London Will

Reviewing Plankwalk was very difficult. It isn't outstanding, nor is it obviously poor quality. It just seems rather indifferent

The action takes place on the scaffolding at a building site, where Sid is being chased by a monster (the foreman?) and has to leap from plank to plank to SULVIVO.

There are special concrete blocks to carn Std points and some planks act as though they slope, though strangely they are drawn straight

If that is not enough, some planks are false and poor Sid falls

straight through them. Presumably dry rot! There are cherries to be eaten too

Controls enable Sid to move left and right, jump and run fast The cherries must be eaten slowly. while the monster can be kuled by running at him very fast, consequently the pace of the game can change quickly.

There are several other trimmings, like power lowers to give Sid his strength back.

The graphics are adequate but not particularly impressive. The black monster is hard to see at

I didn't enjoy this game though it is hard to define why

	Q(14/e
nstructions	4()9/0
playability	60 ^{d/g}
graphics value for money	50%
大田大田大	

Transistors Revenge 32K BBC £6.95

Softspot, 29 South Crescent Prittlewell, Southend Essex

This game has it all - addiction, speed, interest and an enchanting

The scenario is that the discrete components (all those not part of a chip) inside your computer have become Jealous of the CPU chip and decide to try to destroy it to vent their frustration

They do this by moving along the tracks of the printed circuit board until they touch the CPU. causing its destruction

They are aided and abetted by mains spikes, which also desiroy the processor if it is addressing that line at the time, and various

ominously

If you get the unpression that this story has contrasted me you are dead right!

You defend the poor processor with energy pulses and are allowed three re-incarnations per

One excellent feature of the program is the ability to carry on from where you last finished, and therefore try levels you would not

The control layout is excellent, as are the full colour graphics Just to make things more interest ing the circuit down which the components move changes for

instructions D.C Diayability that line at the time, and various household tools which threaten it 100% 9500 1000

Killer Caverns Oric £6.95

Virgin Games, 61/63 Portobello

This offering from Virgin for the One is set in underground caverns inhabited by many nosty perus, ranging from red spiders to blue subterranean worms

The idea is that you, Helpless Harold, must survive long enough to coilect 17 sections of ladder and fit them together When you have done this, Haroid can climb down a well to collect a treasure chest

Loading the tape proved a little tricky, but the instructions were clear enough. The major problem to overcome is your boredom. because after one or two sections have been found the game becomes very stodgy.

A timer counts down from 40,000, so it seems that you are espected to persevere but time seems to pass very stowly

The graphics are simple and Harold moves amusingly but slowly - we need Jumping Jack or Horace on the One soon! Avoiding the hazards requires more luck than skill

There are enough good Oric games around now for me to doubt whether anyone is desperate enough to buy killer

Perhaps if more thought could be put into the display and sound there is potential for a good game here, but my opinion is that it is Virgin on the mediocre P.S.W.

instructions playability 8taphics 90% value for money 1500 20% 20%

Caesar the Cat CBM 64 EB.95

Mirrorsoft, Holborn Circus, London ECIP IDQ

Caesar the Cat has the distinction of being one of the few game to really appeal to me. The object is to make the cat catch some very clusive mice and to take them out through a door

The action takes place on some shelves upon which are plates of cakes, cheese, sausage and other goodies. The moe cat these whilst Caesar is chasing them - the more they eat, the lower your

Also on the shelves are items of SCOTE crockery which, if knocked down by the cal, lose lots of hard carned

Three different coloured points.

species of mice can appear, with different score potentials

The program is very well written with excellent graphics. smooth animation and brilliam sound effects and music.

The cat has real character, and prowls and pounces well. The mice dart about and show real intelligence - they actually sit on the crockery to evade capture

Overall this is a gem of a game h's well packaged, and should appeal to both children and hardened areade fanalics. More please, Mirrorsoft.

instructions playability graphics value for money



90m

10000

10000

80%

JOYSTICK ANNOW JOYSTICK SELECTED SELECTED SELECTED PROGRAMMABLE 4q0Qt3 ectrum or ZX81

PROGRAMMABLE INTERFACE

The AGE Programmable Jovstick Interface is a unique design offering the use of any Atancompatible Joystick with absolutely all soft ware, whether it is cassette or ROM cartridge, with the Sinclair Spectrum or ZX81

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The interface does not interfere with key operation and can therefore be used simultaneously with the keyboard.

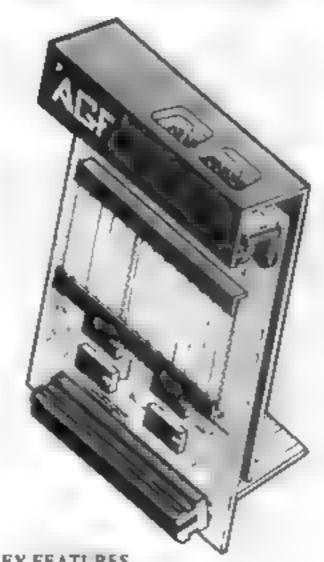
There is no need to remove the interface once fitted as the rear extension connector will accommodate further expansion, Le printers or RAM packs etc. This important feature avoids excessive wear to the expansion port.

The key replication principle pioneered by AGF means that your own programs can use eight directional Joystick movement by utilising simple key reading BASIC.

Two joystick sockets are provided which share the same keys, for use with the majority of two player games. Several interfaces may be used on the same computer for multiple Joystick applications.

The interface is programmed by a two digit code, which is looked up on a programming chart supplied, for each direction and firing button. The two numbers are then selected on a pair of leads which are clipped onto appropriately numbered strips on the inter-

Once configured this can be marked on a Quick Reference Programming Card for storing with the same. As the programming is not power dependent the interface retains the last configuration made and can be Immediately used when next switched on



KEY FEATURES

- Programmable design gives TOTAL soft-
- Accepts Atari, Competition Pro, Wico, Starfighter, Quick Shot, Le Stick etc.
- Rear extension connector for all other add-ons.
- Free demo program and instructions.

PACKAGE CONTENTS SUPPLIED

- Programmable Interface Module as illustrated, complete with clip-on programming leads
- Self adhesive programming chart detailing how to define which key is simulated by UP, DOWN, LEFT, RIGHT, and FIRE. This can be fixed on to the case of your computer or if preferred the protective backing can be left on. The chart is made of a very durable reverse printed plastic and is extremely easy to read.
- One pack of ten Quick Reference Programming Cards for at-a-glance setting to your games requirements. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and company
- Video Graffiti demonstration program which is written totally in BASIC to litustrate how all eight directions and fire can be read. This is also a useful high resolution drawing program.
- 12 months guarantee and full written

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DEALER EN	QUIRIES WELCOME EXPORT PRICES ON APPL	LICATION	

Batter the brickwork and earn a mystery bonus

My two-part game of Deflexor packs a lot into the unexpanded VIC 20

You have to knock out all but four bricks from the top of the

There are piles at the bottom which build up every time you rmss the bal. Should these reach your bat level the game ends

Your bat is controlled by the left arrow key and function key one and is moved by a machine code routine located in RAM area 680-732. A joystick is optional.

Variables

X score HI hi-score HIS hi-score string FE ball hold counter FNB(C) produces a random number between 7768 and 7789 19 rebound angle

How it works part one

4 loads machine code and imtialisés it 9 bi-score reset 10-15 Deflexor display 16 loads next part

Deflexor makes full use of the 3.5K of useable RAM in the unexpanded VIC-20. Peter Berrecloth explains....

There are no side borders, so the ball can go off the side and reappear on the other side. There are five bonuses to score - you'll have to find out how

A permanent high-score is kept in RAM area 319-325, so RUN STOP RESPORE will not reset.

At the start these are the **Options**

I I will change the ball character F3 wal flip between rebound and

normal mode. If normal is sejected, the ball falls straight down. If you choose rebound,

the ball returns at the approach angle

F5 will change the bat from one to two characters wide and vice versa

F7 game start

Note. After entering part one, SAVE it for salety, then type NEW before typing in part two SAVE that also before RUNning

How II works part (wo

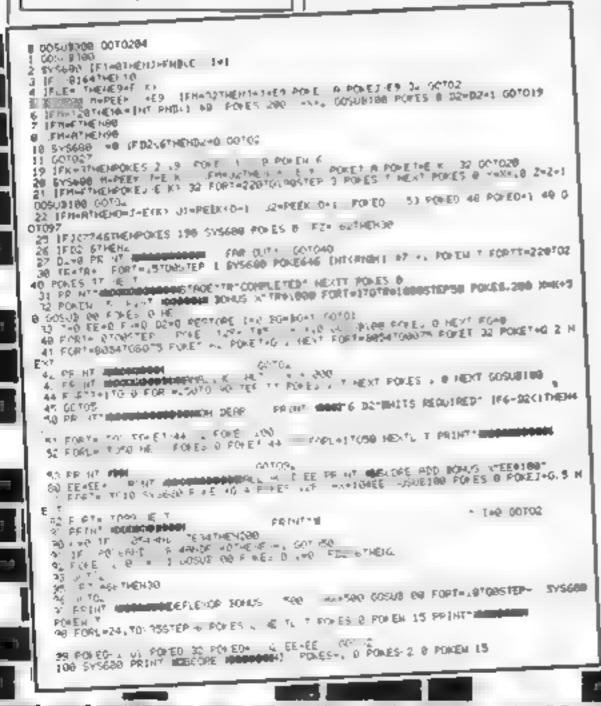
2 check for new ball 3 keep ball on screen 4 determines rebound 5-6 check ball on way down 7-8 check for brick collision 10 return to line 2 20-21 check ball on way up 30-33 "stage completed" bonus 43-45 "far out" bonus and "amazing shot" bonus 50-53 "oh dear" warning 80-83 "ball hold" bonus 90-91 check piles 95 bricks gone? 100-101 display score 200-203 end effect 204-211 options 212-215 score display effect 220-221 start game

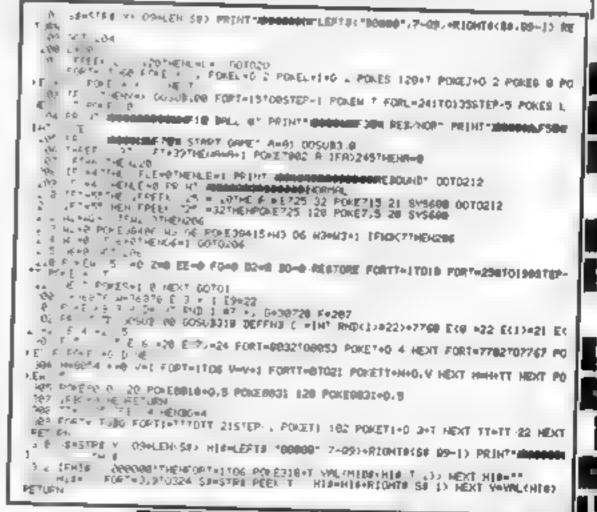
300-309 subroutine to instalise

screen and variables.

310-313 store hi-score

A CAN A MESSAGE BELIEFER HE BE The part of the control of the precision of the control of the con AUGUST LE MAR BE at bill theth char balting distinctivers contract qualities at them. A REM AND A P REPORTED BY AN





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EVEREST (SENT)

A graphic simulation of man's ultimate endeavour!

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DEALER ENQUIRIES WELCOME — EXCELLENT DISCOUNTS AVAILABLE WRITE OR RING JOHN SALTHOUSE

RICHARD SHEPHERD SOFTWARE

FIM HOUSE IN IS ELECTIVE AND DEPPENDIAN SCOURSE BERKS THE 10628616353

Alphabet Cames 48K Spectrum C7.95

Sinclair Research, Free Post, Camberley, Surrey GU15 3BR

Three games are included. A rat zapping game where the child must recognise the letter to fire a gun, thus scoring points, an Invaders-type game where recognition of the letter on the invader prevents him landing, and a game where the child must supply the missing letters in an incomplete alaphabet row.

The program is very user friendly, even to the point of telling you where to locate useful screen routines for large alphabet within the listing, so that you can use them in your own programs And the program is suitably error trapped to prevent less restrained

fingers from running amok!

The graphics are super, colourful and nicely animated, and the program is personalised with the user's name

There is, however, one slight flaw in the logic. To use the program the child has to read the screen... and if they can read the screen they must be able to recognise letters . . . so they don't need the program

For a child without these skills. adult assistance and discussion are required. This, of course, in itself is a valuable educational experience. Provided you remain patient!

instructions	100%
ease of use	100%
display	85%
value for money	70%



In a class of their own

At its best, educational software can turn your micro into a versatile teacher with limitless time and patience. How do these programs match up? Our reviewers tell you what they think

Ollie Octopus' Sketchpad 32K BBC £6.95

Storm, Winchester House, Wootton Grove, Sherborne. Dorset

Screen drawing programs are becoming almost as regular a

feature of a software house's catalogue as space games, but this is a little unusual in that it is aimed at children and meant for them to

This would be great if the program was, indeed, easy to use but it isn't! As an example of its deficiencies there is no way to move the 'paintbrush' (cursor) from one position to another without changing to background

colour so that it doesn't leave a trail.

This means of course that it leaves a trail over the foreground unless you change to that colour at the appropriate moment.

There are other omissions, No. abstract or non-regular area fill facility; only circles, squares and triangles are possible.

The enlarge and contract facility is well done, with good 'rubber-banding' on screen. The colour change system is also near

and easy to use.

There is a screen save facility (taking four and a half minutes) if anyone should want to use it, but no screen dumping command.

D.C.

nstructions .	60%
ase of use	20%
raphics	50%
alue for money	30%



Whizz Quiz 7+ **48K Spectrum** £6.50

Computertulor, PO Box 3, St. Neots, Cambs PE19 3NW

Another instruction program using a game as a carrol to learning Clever Clogs welcomes us to Whizz Quiz by asking the number of players and their

C.C. then leads them through a game of Ludo, where occasionally questions are asked of the players prior to a turn - three correct result in an extra turn

Some of the 100 questions appear more often than others.

Correct answers receive flashing congratulations and C.C. smiles, while wrong answers make him grimace and give corrections

The computer throws dice for

each turn - highest throw being 36 — and then suggests which counter may be moved.

For the age group aimed at, the program will be addictive as they watch their four chips chasing others around the board and hoping for the fanfare as each reach 'home'

The final accolade is a repeatedly flashing name as Whizz Winner

Press p for Play appeared at the end, allowing parents to alter the questions, instructions throughout were reasonable, but only parents with time will find this program useful. T.W

instructions	85%
ease of use	90%
display	80%
value for money	80%

Sum Scruncher Spectrum £7.95

Longman Software, Longman House, Burnt Mill, Harlow

The player controls the tireless Microbug, whose mission is to explore the corridors of an underground maze in search of the answers to a series of computer generated questions.

Microbug is continually chased around the maze by a stupid but speedy serpent whose appetite for microbugs knows no bounds. The game has six difficulty levels ranging from easy addition and subtraction to quite difficult division. .

You have to steer Microbug around the maze, keeping out of the way of the snake, until you are under the answer to the sum disprayed. Moving up through the number opens the passage, increases your score, and destroys

the snake - but there are 39 still

It is quite difficult to get the bug in just the right place to get through. One pixel wrong and you bump your head!

One other little moan - single digit numbers are shown with a zero preceding the digit, e.g. 09. This might be a little off-putting to a child.

Microbug can get caught five times before you lose the game. If you outwit all the snakes you get a

Super graphics and sound new ITame. effects I can't get my children away from the keyboard! (.B.

	95%
nstructions	80%
ase of use	100%
isplay	90%
value for money	

Mr. T's Number Cames 32K BBC 212.95

Ebury Software, 72 Broadwick St. London W1V 2BP

Colourfully packaged in a plastic book-style casing, the tape comes

with full documentation The first game, How Many?, uses nice graphics of a ladybird to

teach five levels of skills

Numbers 1 to 5; Numbers 6 to 9; Counting Ladybird; Number Match; Ladybird Game

There is a gradual development, so that in a further variation of the game the number keys are used.

On the second side of the tape is the Elephant Game which can be played singly, with an adult, or between two children.

This involves feeding and watering an elephant, beautifully drawn, by pressing one of two keys in response to a number on screen.

Decisions have to be made and the game can be won, by filling up on one of the ingredients, or lost, by running out.

A further feature is the Parent Screen. On all games you can make it harder, choose to adjudicate of 'let Mr. T Decide', switch the sound on and off, and adjust the contrast on a black and white

The program is aimed at

children up to about seven years old, but many older children were fascinated by the graphics and simplicity of operation. The only problem is the price. M.P.

instructions	100%
playability .	100%
graphics	95%
value for money	80%



Developments

The chart-hitting

original, and the graphics are great

hit the key to begin, the Spectrum

plays a real Hollywood-style movie

theme tune, and the hunt is on!

Personal Computer News

Mad Martha



his dimiest of the other ing. Her t and it more He steam is wages the babs or top over the at a diheads for the bright ights to have some fun-Transple is he runs as of money. His only way o raise so te lost is to gar bie ris er a ning punds on the spinting wheel of the roughts table.

Just as Hears is gerring at the tables his wife ed his absente. Realing Hinds and orded with the horsekeeping he and a with an ace contract part to pay the happy tale. That's eight, you're Herry Water

And now-

Time for the arthual holder and Mait a decides to sail he had coust Walle who is a water in a push hote in Barnelona.

One afternoon. Man hall sets out on a bus too with her so, sowing A bushness, leaving orders for Manuel to keep at eve 44 brough the the maddup chase, tak it deights a buy ight in while pool Her is a forced to play the leading in the uniaranteed laughs and fir for a



FOR 48K SPECTRUM

A game to invest in ... funny, genuinely. Marvellous adventure, really dotty a refreshing change from some of the doamladen programs encountered nowadays a game where you won't get to the next stage without solving the present conundrum.

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LETTERS

In praise of Things

Your reviewer can't have spent much time on the excellent program Hads of the Things. I find it very addictive, and having obtained all seven rings and the key on several occasions I can't understand why B B couldn't even find one ring He/she obviously couldn't have tried very hard

Incidentally, my score on Halls of the Things is 1,685 Paula Wolferson, Ruislip, Middlesex

Our reviewer commented "I obviously can't spend weeks on each program I review, but I did spend quite a white on Hulls of the Things, and also showed it to a couple of friends whose reactions were the same as mine. However, in the end it all boils down to a question of individual taste."

personal touch

Your reader who complains about computer dealers not giving demonstrations and good advice has obviously not visited the Multi-coloured Micro Shop in Cleveland

There he will find staff who are only too pleased to demonstrate both computers and software indeed, they positively prefer customers to try goods out before they buy. This, I think, is an excellent approach

Another advantage, of course, is that customers know that the cassette or cartridge has loaded on to the shop's computer, and so should do the same when they've got it home

The MMS has a wide range of software and accessories, but if they haven't got what you want, the proprietor Mr Buxton will go out of his way to try and get it for you

How different from the giant High Street chains, who seem to only be interested in offloading their huge stocks on to the public, and don't seem to care about back-up service once you've bought your computer

My advice to Mr Willett is to go for the personal touch — or move to the north east of fine and

of England Kenneth Rowley, Guisborough, Cleveland

Danger errors

I have just noticed that there are a few errors in the listing of my Oric program Danger Island, which you printed in HCW 38

Send your letter to Letters,
Home Computing Weekly, No.1
Golden Square, London W1R
3AB. Don't forget to name your
computer — the best letter
could win £5-worth of
software. Got a problem with
your micro? We'll soon be
starting a queries page, so send
your technical questions to
Queries at the above address



The errors were caused by a bug in the Oric's LLIST command, which causes random squiggles to be printed in the listing

The method stated in the article should stop this happening, but obviously it doesn't work all the time!

Here's a list of the errors I have found 55 word should read

312 should start JFBS

375 should start IF C\$

10190 should read DATABy a pawnbroker's shop,0, 19,0,0

13020 should start E% = 0: FORH = 1T019 Steve W. Lucas, Chendle

Hume, Cheshire

Where's my ZX817

After reading B. E. Smith's tetter a few weeks ago, I scorned his allegations that us ZX81 owners are made to feel like freaks. But when my ZX81 refused to work, I found out how true his words were

I returned the computer to Greens, where I had bought it three months before. I handed it over to the computer salesman, who handed it straigt back, telking me he would order a new one which should be in within the next week.

Two weeks later there was still no sign of it, so I went back to complain. The same safesman said he would reorder the ZX81, which should arrive within the next week.

A week passed. Still no 2X81. I went back again and was told, by the same man "That's one problem machine Quite honestly I can't be bothered, and it seems neither can they" — meaning the main ordering centre

I asked for my money back, and he first offered me an Aquarius, which I refused

He then said I could have my money back, as long as I brought in the receipt. I couldn't find the receipt, but l could prove through my bank statement that it bought the computer from Greens I tood the salesman this, but he wouldn't accept it — he would only say he would reorder the computer

On asking him when I was likely to receive the ZX81, he replied that he didn't know. What can I do now? Martin Eckstein, Bexhill-on-Sen, East Sussex

Mr Knight, buying and marketing manager for home computers at Greens, said: "At Greens, our policy is that whatever the customer wants, we will do Provided Mr Eckstein has some proof of purchase, he is welcome to a refund, an exchange credit note, or a replacement, and I'll be contacting him personally to sort this out.

"We have had some problems with home computer repairs because a couple of weeks ago, our warehouse burnt down, and with it the service department and records, plus a lot of home computers. This headache was aggravated by the fact that Sinclair no longer has repair facilities for the ZX81

"We're discontinuing the ZX81 soon, but we will hold small stocks in reserve so that we can replace machines that go wrong

"Normally our staff gets a lot of training in selling computers — the primary computer sales staff have both on and off the job specialist training. But at this time of year, it's inevitable that temporary staff have to be brought in."

Give us more

Would it be possible to feature more on educational developments? I'm sure that a lot of your readers are parents, teachers and chadren who would like more information on educational software

I have recently with some other teachers started a company producing educational maths programs, and I'm sure there must be other groups of teachers doing the same thum

Ken Heaton, Jive Software, Wheathampstead, Herts

We are currently aiming to carry a page of educational software reviews a week, which is as far as we know more than any of the other general-interest computer magazines, and we are always glad to receive educational programs for review We're also on the lookuut for educational listings — so get programming, all you teachers

MR CHIP SOFTWARE

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WHEELER DEALER

As for the Commodore 64, but now available for the 48K Spectrum, Texas T199/4A and Dragon....£5.50

VIC-20 GAMES AND UTILITIES

JACKPOT

This is it, the ultimate Fruit Machine for the VIC with nudge, hold and respin 100% machine code. "Overall Jackpot is a beautifully written simulation giving superb graphics, animation and use of colour. In fact, this program makes Commodore's Fruit Machine cartridge look unbelievably cheap and nasty." Home Computing Weekly No. 20 19/7/83......£5.50

KWAZY KWAKS

PACMANIA

Choose your own game from the following options — difficulty 1-3 speed 1-3, size of maze 1-3, visible or invisible maze, still or moving power pills, define your own key controls, any combination, if this is your type of game, then this is the one for you, for the 3K expand VIC . . . £5.50

BUGSY (Joystick Only)

This is a Minefield with a difference as you step on the stones whilst collecting purple boxes which give your both time and points, they disappear from beneath your feet. DO NOT DESPAIR! "BUGSY" will randomly replace the stones but avoid bumping into him or its sudden death! An original compulsive and challenging game.....£5.50

MINI-ROULETTE — PONTOON — HI-LOW

DATABASE — create your own files and records on tape

SUPER BANK MANAGER — A full feature version any memory size, but needs 3K expansion £7.50

COMMODORE 64 GAMES AND UTILITIES

JACKPOT 64

At last its here, specially written for the 64, by the author of "JACKPOT" the ultimate Fruit Machine program for the VIC... £5.50 (available from 1st Nov)

WESTMINSTER

A game for up to four players, can you lead the party of your choice and win the general election, you tour the 60 constituencies (seats) buying votes, when you can, (just like the real thing), this must be one of the first board type games specially written for the computer. Why play on your own, have fun with your family and friends playing WESTMINSTER.

RED ALERT

A game for 1-4 players, with sound and graphics. Make money in casinos, commit robbery, hide from the police, hire secret agents, (some of whom can be treacherous), negonate for weapons, find and attack the secret rocket base to launch the missile, and watch the havoc and destruction caused. There's no turning back from "RED ALERT"......£5.50

WHEELER DEALER

A game for two to twenty players, become a tycoon of the motor trade, you must obtain gearboxes, tyres and engines to produce cars for sale. Form syndicates, buy and exchange parts, buy dealerships, but be careful, you may become bankrupt and have to liquidate, find out what you are made of, have you got what it takes to become a WHEELER DEALER.

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Full documentation with all utility programs.

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SOFTWARE REVIEWS

The best of both Worlds?

Not just an arcade game, not just an adventure, these games are a little of both. Does the combination work well or are they, as one reviewer said, neither one thing nor t'other? Read on...

Robber **48K Spectrum** £5.95

Virgin Games, 61 Portobello Road, London W11

In this adventure game you are a robber who has to find a castle dungeon vault to steal the 'untold riches' kept in a safe there.

It has three screen displays. In

the first you have to guide a little man to pick up three objects without being killed by a moving

The second screen shows a row of circles meant to look like a bridge. The circles disappear randomly so it is difficult to cross the bridge without falling through. Three splats and you are back to the beginning

If you make it, the following screen represents flooded caves

Transylvanian Tower Dragon £6.50

Richard Shepherd, 23-35 Elmshott Lane, Sippenham, Slough

This program is one of the new breed of game hybrids, a fusion of two strains which tries to interest two or more types of enthusiast at one and the same time

It is a cross between an adventure, a maze game and a shooting game and involves skills developed by each.

The aim is to meet Count Kreepse and to kill him, thereby gaining a map to help you seek his lost treasure - which unfortunately is still guarded by Vampire

The only way to do this is to walk through the rooms of the lower, which are shown on the screen in 3D.

Unfortunately the best traditions of 3D mazes are not continued here and you only get to see the possible ents for each room as you come to it

if you get above the dungeon level then the bats are after you and only by shooting them can you obtain a floor plan (they carry one each, very handy!),

There are also weapons in the maze for you to gather - hence the adventure-type play,

This is obviously an innovative ides, but it seems to me that this program could easily get boring after a while.

instructions	90%
playability	60%
graphics	80%
value for money	70%



torch beam

and catacombs, inhabited by

deadly fish, birds, and oddly, gigantic bouncing balls, all after your blood

lf you escape these, a path appears occasionally for you to find your way to the treasure. If you take too long on this, a time lock operates and seals you in the vault forever

My copy was difficult to load, requiring very high output levels on the tape player. The instructions gave the wrong movement keys, though the correct ones are given on screen

Not much impressed with this program.

instructions	40%
playability	40%
graphics	30%
value for money	30%



Dodge City 48K Spectrum E9.99

Phoenix, Spangles House, 116 March Road, Pinner, Middlesex

The package comes with two tapes, one for the action game, and the other for the adventure game, which is a 'follow on'

In order to get into the adventure game you have to complete certain tasks in the action game, solve the clues, and come up with a code

Taking the action game first, the scenario is the wild West, and you have to collect the mast and deliver all four sacks of it to Dodge City

Every other time you manage to do this, there is a message waiting for you. These messages are all clues to help you with the adventure game.

While collecting the mail, you have to fight off the 'baddies' in the shape of Indians, Mexican bandits, and common or garden outlaws

In the adventure game you are accused of a murder, and you have to get your own way out of it. This consusts of making a choice from options offered you Some of the responses are obviously a random selection

As you go along the adventure, many of the locations are depic ted at the top of the screen as full colour scenes.

The graphies in the action game are a bit chunky, and the game is not what I would call addictive

instructions	50%
playability	75%
graphics	804
value for money	60%



ABYES **48K Spectrum**

CCS, 14 Langton Way, London SE3 TTL

According to the cassette insert, this is an 'Adventure Game, set in a hidden gorge in the Mountain of the Golden Lion, where you must destroy monsters".

You see a number of diamonds - "monster places", connected by lines - 'bridges', through which you move to the finish by cursor.

Reaching a diamond produces a monster - which turns out to be a test of some kind; memorise letters displayed for eight seconds or a whole word shown for a microsecond; mental arithmetic, and a number of mini-games.

An interesting idea, but not the adventure game you were led to expect and the times allowed for

completion are utterly unrealistic.

The games each use different movement keys and are very unresponsive, while objects you must avoid fill the screen so rapidly that even the Fastest Fingers in the West could never

in one test, you are supposed to make it. complete the fourth number in a sequence and my maths expert could find no logical sequence at all, nor was there any apparent difference between the three levels of difficulty.

Definitely a 'try before you buy', and perhaps the publishers should be a nulle less misleading in their insert description

Instructions playability graphics value for money



Mad Martha II **48K Spectrum** £6.95

Mikro-Gen, I Devonshire Cottages, London Road, Bracknell, Berks RG12 2TQ

This game is a mixture. It is a text adventure game with pictures, plus three action games, along the way

The first of these three games is a builfight. You are in a builting and have to jump over the bull as

The second game is in a restaurant — you have to make your way through the customers as they float up the screen.

The last is a kind of maze game In this you have to steer a disembodied head through a maze against the clock

Although the action is fairly smooth, the graphics are nothing to write home about. Before you get to play the games though, you have to make your way through the adventure game.

-- -- --

At the beginning you are asked for your name (on default, your name becomes Henry). Next you are asked to input your skill level, from 1 to 3, which determines the time you have to complete the game. The display consists of either a rough sketch of your location, for example a crossroads, or maybe the bullring or

restaurant

I found the game rather slow, especially the response to your typed in command. As my, old grandad used to say, it was "neither one thing nor t'other"

B.B.

instructions	80%
playability	60%
graphics	80%
value for money	75%



60%

30%

50%

50%

lt's so furiously simple

This is a simple but often infuriating game written for the BBC micro, using only Teletext graphics and colours

The object is simply to make a grid of 16 squares all one colour Each square in the grid is initially set to one of two colours at random and the player must then move around the grid one square at a time, using four control keys: U.D.R.L

Each time the player moves onto a square it changes to the alternate colour. The only restriction is that you can't move back to the square you just left

Sounds easy? It can be — but just try it a few times.

The game is written in BASIC for the BBC micro and should run happily on either Model A or B It may not run quite so readily though on machines with the 0.1 operating system

The game was developed using a colour monitor so some of the colours may need altering to show up satisfactorily on a monochrome TV or monitor

20 VDU23,1,010;010;

100 PROCESI ectmova

180 DEF PROCINIT

220 FOR 1=1 TO 19

R=RND (2)

NEXT

370 S=0:26="

498 FOR 1=1 TO 4

380 ENDPROC

PROCprint

10 MODE?

40 L=01H=0

50 *FX11,0 60 PROCINTO

90 REPEAT

70 PROCINIT

90 PROCECUTE

110 PROCchange

120 PROCehock

130 PROCECUTE

140 UNTIL E>1

150 PROCend

160 GOTO70

240 NEXT

280

290

300

310

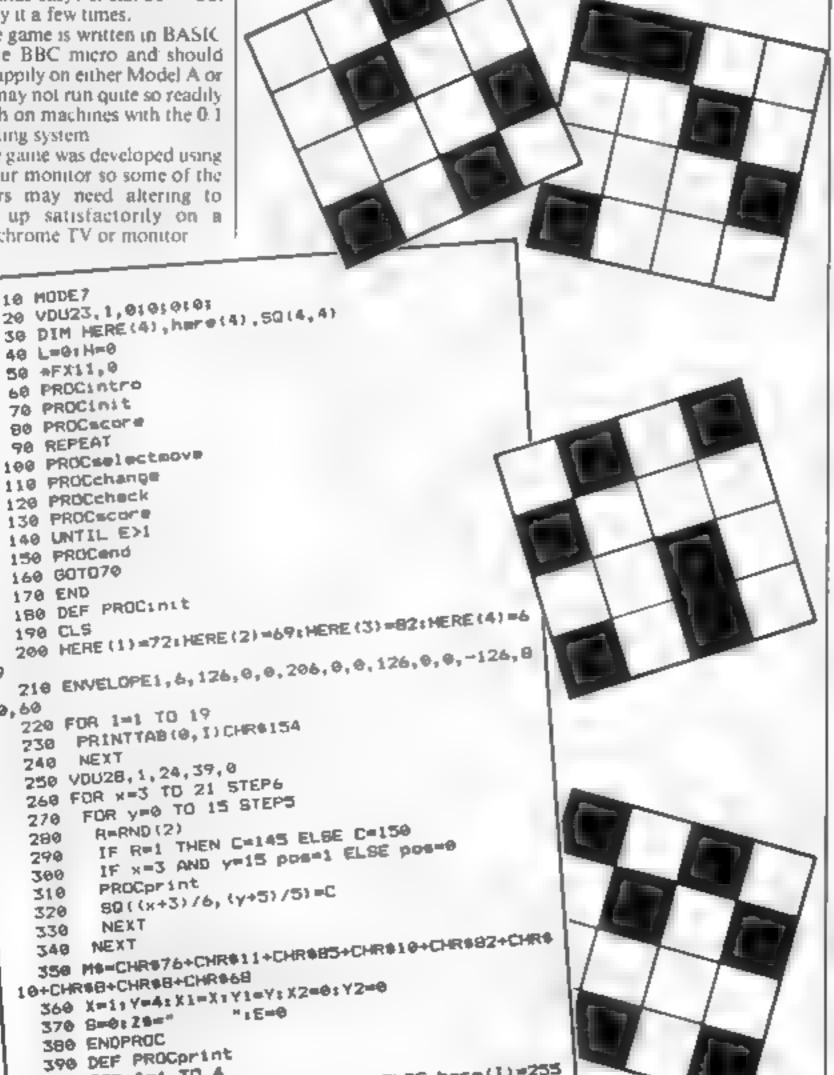
320

330

170 END

0,50

Invert sounds an easy game to play — but wait until you try. John Waterhouse wrote it for the BBC micro, model A or B



How it works

10-170 set up screen, DiMension arrays, call PROCedures

180-380 PROCimt sets up initial conditions for game and prints grid using PROCprint Line 200 contains ASCII codes to print HERE to identify current square

220-250 print control codes for separated graphics down left hand side of screen and then redefine screen

260-340 randomly select one of two colours and print grid Variables x and y are coordinates of upper left hand corners of squares. Array SQ(,) stores colour values of squares

390-450 PROCprint prints one square and if it is current position (pos = 1) prints HERE within the square

460-590 PROCselect move prompts player to move by printing MS (defined at line 150), checks move is valid and updates move-to co-ordinates (X,Y), current position coordinates (XI,YI) and last position co-ordinates (Y2,Y2). If move is invalid score is incremented (attempts) to move off the grid are gnored) and player is warned

600-690 PROCecore prints current score (number of moves) S. Low score L. Score for last game H, and direction of last move ZS

700-770 PROCcheck totals values held in array SQ(,) until all squares are one colour and sets flag & to 3, if this is Truc

790-890 PROCchange re-prints old square in same colour but without HERE and printsnew square in alternate colour by providing co-ordinates x,y for PROC print and setting colour C Stores new colour to array 5Q(,)

900-990 PROCinst gives brief instructions for playing the game and shows movement keys

1000-1100 PROCend displays suitable prompts at end of game

1110-1380 PROCintro produces a multicolour title using Teletext graphic characters. Data is read from statements at line 1390 onwards and printed directly to the screen. The second FOR ... NEXT loop is used to invert colours of the first image. The *FX command at line 1340 is used to ensure that the caps lock is on before using GET

The main body of the game is contained within a REPEAT UNTIL loop between imes 90 and 140. Line 20 turns off the cursor and line 50 turns off the keyboard auto-repeat.

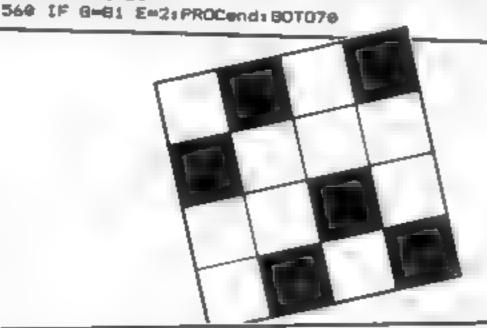
410 IF poset here(I)=HERE(I) ELSE here(I)=255

BBC PROGRAM

```
PRINTTAB(x,y+I);
  VDUC, 255, 255, here (1), 255, 255
  440 NEXT
  ENDPROC
  460 DEF PROCESIECTMOVE
  470 PRINTTAB(6,23) "Which direction ": Hs;
  480 #FX202,32
  G=GET
  500 IF E<>1 THEN X2=X1:Y2=Y1:X1=X:Y1=Y
  510 IF GC>85 AND GC>68 AND GC>74 AND GC>82 AND
 8<>81 THEN 480
  520 IF 8=85 THEN Y=Y-1:25=" UP ": IF Y<1 THEN
Y=1:E=1:GDTD480
  538 IF 6=68 THEN Y=Y+1:28="DOWN ": IF Y>4 THEN
Y=4: E=1: GOTO480
 540 IF 8-76 THEN X-X-1: Z8-"LEFT ": IF X<1 THEN
X=1:E=1:GOT0480
 550 IF 8-82 THEN X-X+1:20-"RIGHT": IF X>4 THEN
```

بر در در مینیک و مناصف کی میشود در در در در میشود که میرود در سالم

X=4:E=1:00TU480



```
570 IF X2=X AND Y2=Y THEN I = "NO!!!" (SOUND), 1,
100, &1E=1:X=X1:Y=Y1:S=S+1:PROC=core:G0TD480
  580 E-0:8-5+1
  590 ENDPROC
  400 DEF PROCECOPE
  618 PRINTTAB (38, 2) CHR 9131; "MOVES"
  620 PRINTTAB(32,4) CHR$13118
  638 PRINTTAB(28,7)CHR$132;"LAST GAME"
  440 PRINTTAB(32,9)CHR#132;H
  650 PRINTTAB(28,12) CHR$133; "LOW SCORE"
  660 PRINTTAB(32,14)CHR0133(L
  670 PRINTTAB (28, 17) CHR$1301 "LAST HOVE"
  680 PRINTTAB (30, 19) CHR#130; Z#
  690 ENDPROC
  700 DEF PROCcheck
  718 tot=0
  728 FORI=1 TO 4
  730 FOR J=1 TO 4
       totetot+SQ(1,J)
  740
  750 NEXT
  760 NEXT
  770 IF tot=2320 OR tot=2400 THEN E=3
  780 ENDPROC
  790 DEF PROCchange
  800 X=X1+P-2: A=A1+2-2
  810 C=SQ(X1,Y1):pos=0
  820 PROCprint
  930 x=X+6-3:y=Y+5-5
  840 IF SQ(X,Y)=150 THEN C=145 ELSE C=150
  850 pps=1
  860 SD(X.Y)=C
  970 SOUND1,-10,4,4
  889 PROCerint
  898 ENDPROC
  900 DEF PROCinst
  910 CL8
  920 PRINTTAB(4,2) "The object o' the game is to
  930 PRINTTAB(4) "make all sixteen squares the"?
     same calour"
  940 PRINTTAB(4) "You must do this in the least"
      possible number of moves**** You may no
t move back to the" position previously occ
 upied"
```

950 PRINT' Nove using these keys :- " "

1t"

960 PRINTTAB(12) "U - up" "TAB(12) "D - down" TAB

(12)*L = left"'TAB(12)*R = right"'TAB(12)*9 = qu

```
970 PRINT' CHR$129;"
                                 PRESS BPACE BAR"
   980 G=GET: IF G<>32 THEN 980
   998
  1888 DEF PROCend
  1010
  1020 IF E=2 THEN 1000
  1030 PRINTTAB(6,4) CHR#133; "YOU SUCCEDED IN"; CHR
 $130;S;CHR$133;"MDVE5"
  1040 H=5
  1050 IF L=0 THEN L=8
  1060 IF 8KL THEN L-S ELSE 1080
  1979 PRINTTAB(5,8) CHR$1311 "YOURS IS THE NEW LOW
  SCORE"
  1080 PRINTTAB (2,16) CHR$129| "PRESS SPACE BAR FOR
  ANOTHER GAME"
  1898 B=GET: IF B<>32 THEN CLB:FOR I=1 TO 200:PRI
 NTTAB (RND (39) , RND (23) ) CHR4 (RND (7) +128) ( "END") (NE
 XT: CLS: END
  1100 ENDPROC
  1110 DEF PROCENTED
  1120 CLS
  1130 FOR 1=4 TO 9
  1140 FOR J=1 TO 37
  1150
        READ char
  1160
        PRINTTAB(J.I)CHR4(char)
  1170
       NE XT
  1180 NEXT
  1190 RESTORE
  1200 FOR I=11 TO 16
  1210 FOR J=1 TO 37
  1220
        READ char
        IF J=1 AND I=11 char=149
  1230
        IF J=1 AND 1=12 char=148
  1240
         IF J=1 AND I=13 cher=150
  1250
        IF J=1 AND I=14 char=146
  1260
  1270
        IF J=1 AND 1=15 char=147
         IF J=1 AND I=16 char=145
  1286
         PRINTTAB (J. I) CHR# (char)
  1290
 1300
        NEXT
  1310 NEXT
 1320 PRINTTAB(5,22) "DO YOU WANT INSTRUCTIONS"
 1330 PRINTTAB(7) "Press Y-yes or N-no"
 1340 •FX202,32
 1350 G=GET
 1360 IF B<>89 AND B<>78 THEN 1340
 1370 IF BEB9 THEN PROCEINGE
 1380 ENDPROC
 1390 DATA 145,255,32,32,255,52,32,32,255,32,32,
239,48,32,224,63,32,32
 1400 DATA 255,47,47,47,47,32,32,255,47,47,47,25
5, 32, 32, 47, 47, 255, 47, 47
 1410 DATA 147,255,32,32,255,239,49,32,255,32,32
, 106, 53, 32, 106, 53, 32, 32
 1420 DATA 255,32,32,32,32,32,255,32,32,32,25
5, 32, 32, 32, 32, 255, 32, 32
 1430 DATA 146,255,32,32,255,42,117,32,255,32,32
, 34, 255, 32, 255, 33, 32, 32
 1440 DATA 255,124,124,32,32,32,32,255,124,124,1
24, 255, 32, 32, 32, 32, 255, 32, 32
 1450 DATA 150,255,32,32,255,32,239,48,255,32,32
,32,239,112,63,37,32,32
 1460 DATA 255,32,32,32,32,32,255,32,235,52,3
2, 32, 32, 32, 255, 32, 32
 1470 DATA 148,255,32,32,255,32,125,255,32,32
, 32, 106, 255, 53, 32, 32, 32
 1480 DATA 255,32,32,32,32,32,255,32,34,125,3
2, 32, 32, 32, 32, 255, 32, 32
1490 DATA 149, 255, 32, 32, 255, 32, 32, 170, 255, 32, 32
, 32, 32, 255, 32, 32, 32, 32
1500 DATA 255, 124, 124, 124, 124, 32, 32, 155, 32, 32, 1
70, 117, 32, 32, 32, 32, 255, 32, 32
```

والمساوي والمنافية والمنافي والهواز والمناف والمساور والمساور والمساور والمساور والمنافية

SOFTWARE REVIEWS

Spectrum E4.50

Lerm Software, 16 Stoneput Drive, Cottingham, Market Harborough, Leics

I cannot believe that anyone would be naive enough to believe that a tape copier such as this is produced just to make back up copies of your own tapes

However, just to make sure that you don't infringe any copyright laws, Lerm does remind you that it is illegal to make copies of commercial tapes

So, bearing that in mind, if you do need a tape copier, this is probably as good as any

There are two programs on each side. One program is called simply Tape Copier, and the other is called Minitage.

My version came complete with

four A4 size sheets of information and instructions about both programs. I found it easy to use, and it worked every time on my own programs.

Lerm claims that this tape will copy any other tape, except those produced by Lerm itself. I have no doubt that the software houses will do their best to disprove that claim.

l also have no doubt that people will continue to produce tapes similar to this one, and that people will continue to buy them. What use they put them to is a matter of conscience.

8.8.

instructions	100%
ease is use	100%
display	80%
value for money	100%



Serious Software

Our reviewers try out a selection of programs with a job to do

Monitor and Disassembler Spectrum £12.95

Sinclair Research, Freepost, Camberley, Surrey GU15 3BR

This is the companion to the Zeus Assembler that I reviewed a short while ago, Only those who use machine code, or assembler will find this of interest

But having said that, if you are interested in taking up either, then perhaps this may help you

I say that because the disassembler will convert the data held in any address into standard 280 mnemonics in a very readable form

The command P will display

data in hexadecimal form from a specified address, and the command D will show that data disassembled

For the 'initiated', registers can be assigned using A, and the contents of all the CPU registers are displayed using R

Substitution of byte XY with byte YX within a block is possible, as is setting a block of bytes to zero. If you copy a block of bytes from one location to another then verification of the move is quite easy

A useful utility is the setting of a breakpoint. After setting the breakpoint and running, the registers' status is displayed,

OLO.

mstructions	100%
ease of use	95%
display	95%
value for money	75%
THE WHITE WHITE WHITE WAS	

中国自由国家

Toad Graphics TI-99/4A £6.95

Timeless Software, 3 Bridgend, Fauldhouse, West Lothian

This program is designed to give the computer novice an understanding of computers and the principles of programming them

When the program is run, the Toad is displayed near the centre of the screen and the set of standard "tiles" is displayed at the bottom. The tiles are simply pre-defined characters which include, among other things, various faces and shapes

Using simple commands, the Toad can be made to move around the screen. For instance, if FO 2 is typed into the computer, the Toad will move forward two squares. Similarly, if BA 2 is typed, the Toad will move backward two squares.

The Toad can be turned by using LT for left and RT for right

Tiles can be dropped around the screen, and the Toad can leave 'footprints' of tiles

You can re-define your own characters by drawing them on an eight by eight grid on the screen

There are many different commands that can be used which instruct the Toad to complete various tasks

As well as giving beginners an introduction to computer programming, Toad Graphics should be interesting to the more experienced programmer who would like a change from programming in BASIC J.J.

instructions 100% case of use 100% to the display 25% value for money 95%

食り食り食り食り食

Dream: Editor Assembler Dragon 32 £7.95

Dragon Daia, Kenfig Industrial Estate, Margam, Port Talbot

This is an unusual package containing, as far as I can see, two unrelated programs in machine

One program is essentially a word processor or screen text editor which can be used to create letters, files, books etc., and the other is a full feature 6809

The editor has facilities for creating new text or foading or merging old text

There are 13 cursor or screen control commands and 25 text handling commands which gives a family reasonable word processor. Many of the more subile and

fancy controls are omitted but there is enough to be useful to the home user or a very small business

The assembler is efficient and well documented, but does not explain or teach machine code programming, this is a whole book subject anyway. Object code may be saved separately on

The two programs link up in sofar as files of data can be created by the editor and read from your machine code program—could be useful to a machine code programmer writing adventures! It can be used in conjunction with the Dreambug monitor and debug program.

ease of use display value for money 91 % 63 % 71 % 80 %

Abersoft forth 48K Spectrum £14.95

Melbourne House, Glebe House, Station Road, Cheddington, Beds

Anyone learning Forth needs to practice, and many beginners will buy this program

The 28-page instructions assume prior knowledge and initially are mainly incompre

hensible, not helped by several omissions and misprints

But if you absorb the bits which describe the difference in use of computers, i.e. different methods for getting the E-Mode Red symbols, and restrain yourself from jumping cagerly to the special Abersoft graphic commands, things eventually become clearer

This is an implementation of Fig-Forth, with disc simulation in RAM plus special extensions

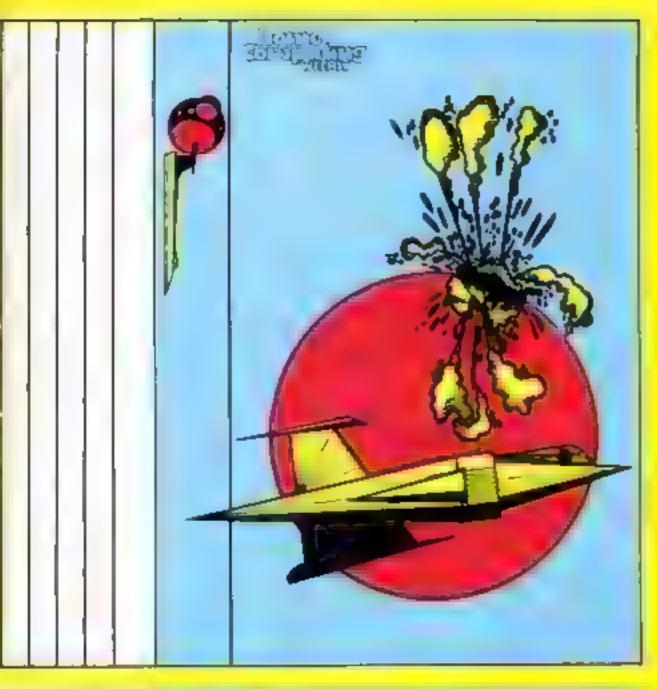
covering sound, colour, graphics, printer and keyboard commands

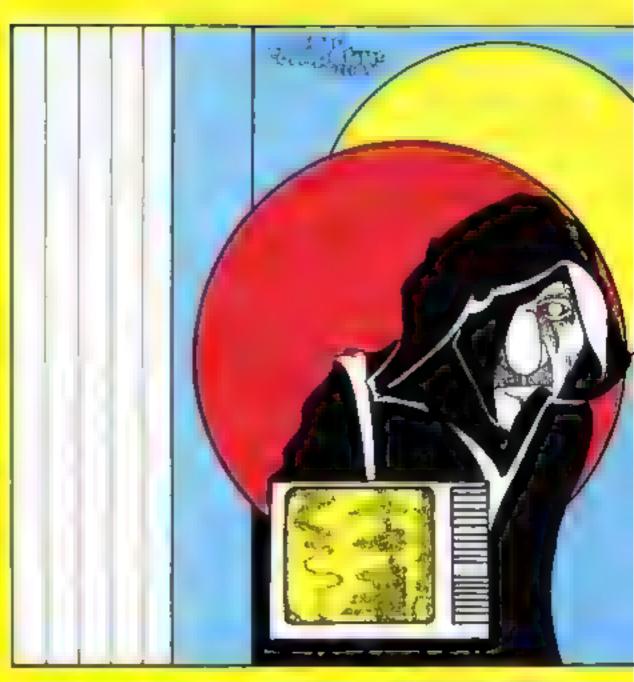
Sound is much more varied than possible with BASIC and speed, particularly in graphics, can be improved up to 50 times

The Editor facility is rather complicated to use and the glossary does not specify which words are Abersoft specials, and therefore non-Fig-Forth standard, which might make your programs difficult to run on other Forth computers

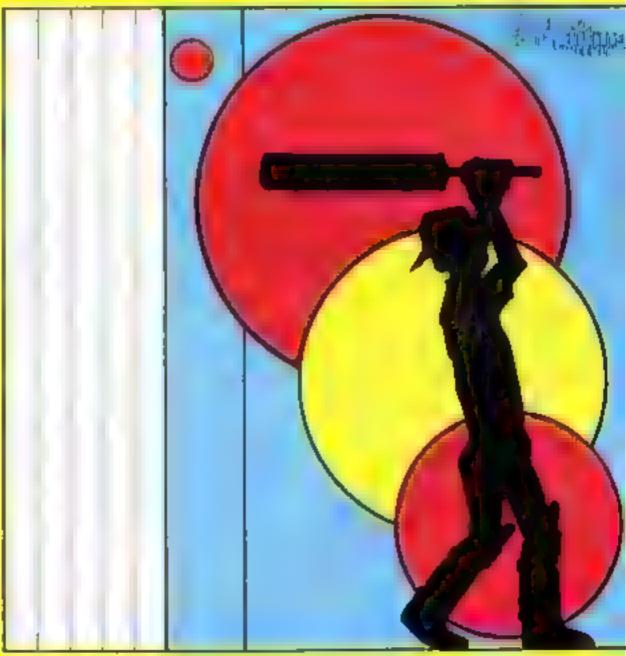
The documentation could be more beginner-orientated and perhaps the graphic examples could be a little clearer, but the program itself is excellent and the special features are well worth the extra money D.C.

instructions 60% ease of use 90% 90% value for money 95%





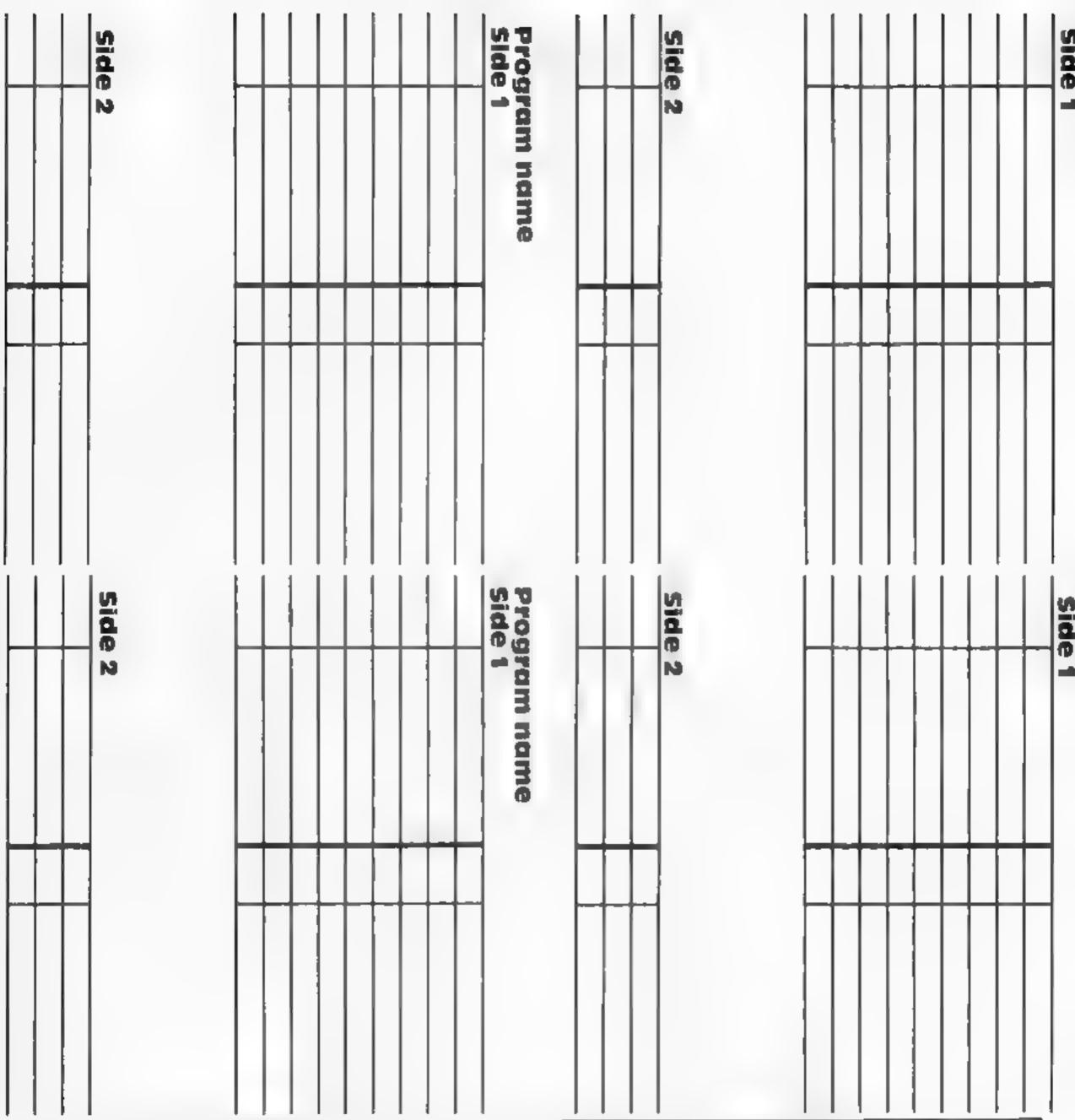




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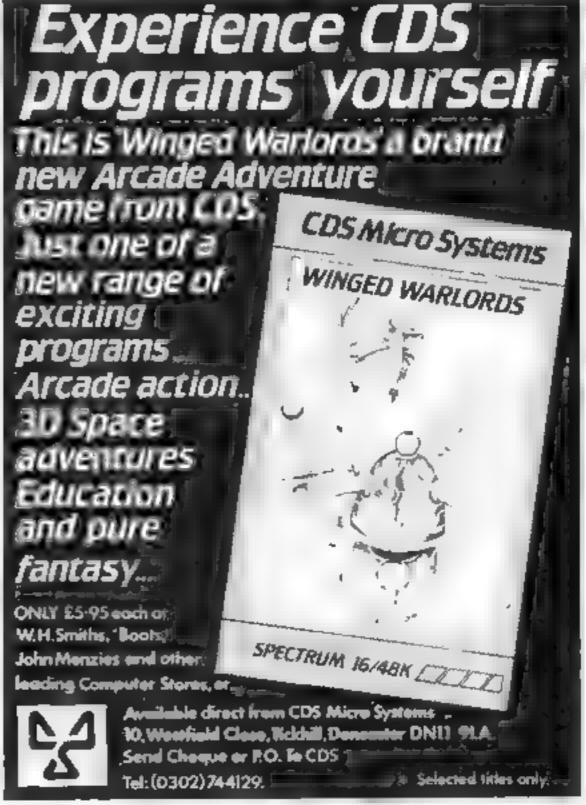
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SOFTWARE REVIEWS

A.B.M. Control/ Cavern Hunt TI-93/4A EXT. BASIC, Joystick) £4.95

Fantasia 99, from Timeless Software, 3 Bridgend, Fauldhouse, West Lothian, Scotland

A B M. Control is a one or two player game in which you must survive through as many screens as possible by defending your cities against the computer's attack

This becomes more difficult to assuage as bombers and cruise missiles join the barrage of bombs

A score is given after each successful defence, determined by the number of cities intact and various classes of missile destroyed, both as multiples of screens completed. The game ends when no more cities remain

Cavern Hunt is a version of Hunt the Wumpus, or in this case the Wumpit!

You are randomly located in a one-dimensional maze

The maze contains bats and shme pits. The number of these, as do Wumpits to be found, depend on which of three levels of difficulty is chosen

The number of bloodspots left as clues to the Wumpits' whereabouts are also determined by difficulty level

Actually travelling through the maze is quite slow J.W.

instructions	90%
p ayability	80%
graphics	80%
value for money	100%



Multi-Games Pack 2 48K Oric £6.90

Tansoft, J Club Mews, Market Square, Ely, Cambs

Another package of games from Tansoft, comprising a varied selection with just about something for everybody. The best of the bunch are a computer version of the old favourite Hangman and a sort of 3D noughts and

Hangman can be modified to take an alternative selection of words, so that when you have mastered the original set, you can substitute your own. One slight snag - I am sure the random

Collected Works

Compilation cassettes can be a good way of hedging your bets when buying software. Here are five our reviewers have tried out for you

selection of words could be made a little more random

3D Link is a game for clear thinkers. You can play either against an opponent or Oric and 1 think with practice, you could develop some quite sophisticated

I will not say much about the other three games, since they are of limited appeal and will probably only interest the youngest players for any length of

All five games are recorded slowly and are interconnected in the programs, and I found it very tedious having to wait so long to load and play each different game. However, there were no loading problems.

instructions	70%
playability	1276
graphics	75%
value for money	65%
AND TRANSPORT OF THE PERSON NAMED IN	

The Soft Seven Dragon 32

T. D. Copsey, 20 Thorington Avenue, Daws Heath, Hadleigh, Benfleet, Essex

I expected this to be a typical compilation cassette. Seven standard games, all described as "family favourites", written by a hobbyist and selling for a modest sum to compensate for belowaverage presentation

Well, it wasn't quite like that Soft Seven has more going for it than many other compiletion tapes

The programs are loaded in one go, with a menu depicting your choice displayed on screen. I was amazed that so much could be fitted into the Dragon's memory, and it's a big advantage to be able to select between programs by a

single key press, without having to reload

The programs themselves aren't wildly original, with names like Galactic Bomber, Hear and Spell, Wordsearch, Graphix, Music Maker, Hangman and The Great Race

Several do stand out, though Galactic Bomber is an effective hi-res bomber game, which shows that a BASIC game can still be fast. Hear and Spell uses the often-neglected MOTOR and AUDIO commands to play a hearing/spelling word game

In conclusion, an ideal first tape for the new Dragon owner -the sort of tape that Dragon should have supplied with the machine, in fact. C.G.

Instructions	65%
playability	55%
graphics	35%
value for money	95%
THE PERSON NAMED IN	

Games Pack III 48K Lynx £7.95

Gem Software, Unit D. The Maltings, Station Road, Sawbridgeworth, Herts

This tape contains no less than three games.

The first, Reverse (Othello), plays a reasonable game, and can be set at different levels of difficulty. It loads in two parts first the instructions, then the game proper.

Second is Pontoon - a threeway card game simulation between two human players and the computer. The graphics on this are superb, and the game is played well. I think this is the best game on the tape, my only complaint being that it is a little slow

Game three is a version of the old favourite where you are a snake and have to try and touch

certain objects, while growing longer all the time, and not bumping into your own body.

Thus is as reasonable an implementation as you can get, with good grapmes and a few new

All the games have good instructions, and the tape loaded with no problems on TAPE3 Excellent value for money as a starter pack - the games aren't the usual run-of-the-mili arcade variety, and should offer something for everybody.

Instructions playability graphics value for money

80% **有有效** 90)% 80%



Games Pack IV 48K Lynx £7.95

Gem Software, Unit D, The Maltings, Station Road, Sawbridgeworth, Herts

Both games on this tape load in at once, and a menu option is used to select between them

In the first, an aeroplane is trying to land on its aircraft carrier, but the way is barred by

"chemical clouds". These must be bombed away to allow the plane to land on the moving deck of the ship

Bomb the ship by mistake, however, and you destroy part of it, leaving you less area to land on This is a very easy and therefore uninteresting game

The second game shows more promise, being somewhat more challenging, though you'll soon find you win this one every time, too.

Here you have to try and depth charge submarines from a ship

However, both games have excellent graphics and clear instructions for use, and loaded quickly and without fuss on TAPE3. Both written in machinecode, they were very fast. The graphics animation was smooth and flicker-free

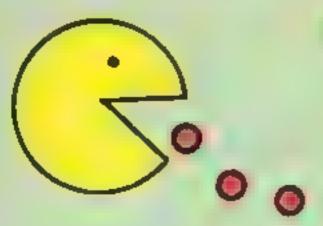
Perhaps this would be a good tape for younger children, or for people who can't get the hand of the more demanding video

games. And two games on the tape means that it isn't bad value M.R. for money.

80% instructions 20% playability 90% graphics 60% value for money



DRAGON 32 PROGRAM



The choice is

Can you chomp your way through the maze without being chomped? How many levels can you pass?

This game has instructions and difficulty level, hyper jump and power meter. You have to eat all the yellow dots (food) and dodge the ghost.

How it works

100-310 variable and level of difficulty 320-490 sets up screen 550-980 moves ghosts and man 990-1030 if you lose a life. 1110-1160 end part 1170-1310 instruction

If you eat the blue dots in the corner (power pellets, eight points) then you become a ghost

Lots of features are built into John Williams' game for the Dragon 32. Will you chomp to victory... or will you be forced to use Hyper Jump?

28 H9C=168+H8#= *CHOMP-MAN*

25 Hb -6

40 CLS

58 DD-9

AS BOTOSS

78 PRINT "

r meter THIS IS TO SEE HOW HUCH POWER PELLET POWER YOU HAVE LEFT , THIS IS AT THE BOTTEM OF THE SCREEN", IF DO-1 THEN RETURN ELSE BUTDIDO

88 CLE

PO CLA

188 DIMLK(28,28):DIM KL(28,28):DIM TV(28,28):DIM H(28,2

IPAINT(119,92),4,4

Variables

HI high score G1,G2,H1,H2 ghosts PP food

chomper. But beware: as soon as you eat them they return and you have a limited supply shown at the bottom of the screen as a yellow box with P.M. (power meter) at the side of it.

Hyper Jump enables you to move from anywhere on the screen to the middle, but you only have four of these so use them carefully.

Hints on conversion

The Dragon uses a fairly standard version of Microsoft BASIC so just study the listing to convert for any other micro-

```
0):DIMSP(20,0P):DIMSI(28,28):DIM 8D(28,28):DIM 8P(28,28
110 DW-20: ZX-30
128 BC-0:FF-0
130 PPelx
148 L-19
158 CLB6: INPUT "INSTUCTIONS (Y/N)"| Co
140 (F D#="N" THEN GOTO188
170 IF D4="Y" THEN PLAY"02L5G": 80T0 1178
100 CLS4: INPUT"LEVEL OF DIFFICULTY (1,2,3,4,5)"; X: IF X>
5 THEN 9070192
198 DL-X
200 X-X+3
210 OW-GW-X:X-X-5:PP-PP-X:PLAY*L5 048*
                                                         B
220 CLSIPRINT"
                        CHOMPERS
   JOHN WILLIAMS ""
230 HP=0
246 FOR X=0 TO15:PLAY"03L219T2558ABFEDLBC":NEXT
250 LY=3(8A=0W
269 LK=0
270 FF-9
280 TG-8
298 G1=288:H1=223:G2=11:H2=28
300 G3=16:H3=31:G4=11:H4=20
310 Q-88: W-98: E-117: A-125
320 PHODES, LEIF LK-B THEN POLE
330 IF LK-2 THEN GOTO 400
346 FORC=22 TO 166 STEP12
350 FORZ=24 T0216 87EP12:P8EY(Z,C,Z)
360 NEXTINEXT
370 DRAW"C2BM210,190:U18R5D5L5R5B R10D5U18R4D10U18R4D10
 "ICOLOR2,5:LINE(7,185)-(265,198), PSET, 8F; COLOR4, 5
 180 PSET(215,189,2)
390 DRAW"C28M250,28jL5D10R50 DSD10U5L5U5D100 DSD10R5U10
LED108 DED18610R3D19610R4D188 DEB L265RED565UED108 DER5
L505R5L505R5L59 D5011U5F6H6R5U5L50108 D5R5L5D5R5D5L5C4*
 400 DRAW"BM12, 106; U72R24CZ4UZ4R7ZDZ4UZ4RZ4; R24; R24] RZ4DZ4UZ
 4R72D24L24R24D48
 419 LK-8
428 DRAW"8M12,186; D48R24L24D24R72U24D24R24; R24(R24U24D2
 4R72U24L24R24U72
430 DRAW"8M36,58| D36R24L24D36| B | R24| D24U36| B U48U36D36
 IB 1824;8 012;024824L24U24824;8 U24;L248248 U24824B 024
 RZ4B D24_24RZ4D24LZ4B D24R24LZ4B D241_Z4B UZ4LZ4
 448 C0="02LZ57AT3"
 450 DRAW"BM180,34:036:8 ; R24-12072U36L24:8 ; D24D36
 460 DRAW"C38M115,93E5F5G5E5C4" (GET(115,110)-(125,65),K
 L(PUT (115, 110) - (125, 65) ,LK
 465 COLOR2, 2:LINE (5,179) - (238,5), PSET, B: PAINT(1,1),3,2
 478 PSET (24, 22, 3): PSET (216, 22, 3): PSET (24, 166, 7): PSET (21
```

```
490 BCREENI, B
500 CIRCLE(24,19;,0,2,1,.5: DRAW*C28M17,20; E2F2E2F2E2F2E
 2F2" | PAINT (24, 17) , 2, 2
518 GET(14,11)-(31,20),9P
328 GET (115,88) - (125,194) ,H
530 06T(16,11)-(31,20),0P
540 PUT(117,89)-(125,98).9b
550 JY=JOYSTK(1):JK=JOY8*K(8)
568 IF MP=4 THEN BOTOSBB
579 IF PEEK (45289) =12408 PEEK (45282) =254 THEN B-881 W=98
#E=117;8=125;PLAY"_10T150CDEF00T10ADC";HP=HP+1
568 PUT (E,Q) - (R,W), M)
590 IF TOK! AND 0-5-64 AND E-5-03 THEN PLAY"LIBOIDGOLIG
01AAA018A01CC"180701818
499 IF TG(1 AND 0-5-82 AND E-5-81 THEN PLAY*L5003GGGL20
O2FFFL1001FEEL601CCCDDDD"+GOTO1814
618 IF TOXO AND D-3+84 AND E-5-83 THEN BOSUS 1848
628 IF TB>8 ANDG-5-82 AND E-5-81THEN GOSUB1878(GCBUB 1
438 IF PPGINT(E-8,0+4)=3 OR PPGINT(R+7,0+4)=3THEN BC=8C
+Q: GOBUB +9B
648 IF T938 THEN T8-TB-11FORF-189 TO191 1P8ET(K,F,2)1NE
XTIKEK-4: IF KECT THEN KE14
458 IF TOPP THEN TO-BIPLAY"LEBAAACCCEEE"IC4-"LEBOZA"
668 PUT(61,82)-(H1,H2),8PtPUT(83,84)-(H3,H4),8PtPLAYC#
678 PUT (81,82)-(H1,H2),TV:PUT (83,84)-(H3,H4),TV
689 AS=RND (150)
498 IF ASKSA ANDG2+3KD ANDPPDINT(H1-7,H2+14)K> 4 THEN P
UT (81,82) - (H1,H2),TV:82-82+12:H2-H2+12:TF+1:80T0728
799 IF A8(6A ANDG1+5>E AND PPOINT(G1-4,G2+8)(>4 THEN 61
#81-12:H1=H1-12:TF#1:8070728
718 IF ASCSA ANDGZ+5>0 AND PPOINT(81+8,82-1)<>4 THEN 82
=32-12:H2=H2-12:TF=::00T0728
728 PUT (E.D) - (R,W) , 80: IF TF=1 THEN TF=8: 80T0740
738 IF AB<BA ANDG1<E-5 AND PPDINT(H1+5,H2+2)<>4 THEN 8:
•G1+12+H1→H1+12
748 IF H3<E AND PPOINT(H3+5,H4+2)<>4 THENB3=B3+12;H3=H3
750 IF INKEYSO"N"THEN FF=132
768 IF AS(SA ANDG4+5>0 AND PPDINT(B3+8,G4-1)<>4 THEN B4
=84-12:H4=H4-[2
778 IF ABCBA AND M448 AND PPOINT(H3-7,H4+14)<>4 THEN 84
#84+12|94#H4+12
786 IF A9<8A AND 83>E AND PPOINT(83-4, H4+2)<>4 THEN 83
-G3-12:H3=H3-12
798 IF JY>58 AND PPDINT(E+4,W+8)<>4 THEN BOBURBER
888 IF JYCS AND PPDINT(E+4,Q-6)<>4 THEN 80808 708
818 IF JK>6# AND PPOINT(R+7,0+6)<>4 THEN GOTO 968
928 JF JKCS AND PPOINT (E-B,G+6) <>4 THEN GOBUS938
838 IF FF>131 THENCL84: DL=DL+1: 84-84+18: PP=PP-5: PRINT&
224+7, "YOUR SCORE IS SCIEPLAY "OZL 7EGEFEA": FOR X=1TO 500
```

CHO

486 CIRCLE (128, 94) ,7,4,1,.3) DRAM" BM128,93; C4D7U7R7L7C2"

6,166,7)

DRAGON 32 PROGRAM

1 LK-81 NEXTX | 8010848 848 IF FF >131 THEN PRINTERS6+4, "HIGH SCORE =" | HSC | | FOR X=1TO 600: MEXT 850 IF FF>131 THEN FF-8:80T0298 849 GOT0559 876 IF PPOINT (F+4, W+8) = 2 THEN BC=8C+1; FF=FF+1 860 W-W+12:0-0+12 898 9010552 900 IF PPDINT (E+4, 0-6) =2 THENSC=SC +1(FF +FF+) 918 Q-0-12:W-W-12 928 GOTO558 938 IF PPOINT(E-8,Q+6)+2 THEN SC=8C+1:FF=FF+1 940 E=E-12:R=R-12 958 BOY0558 968 IF PPOINT(A+7,9+4)=2 THENSC=SC+1:FF=FF+. 976 R=R+12:E=E+12 960 BOTD550 998 K# BIFOR K#K TO PP#4 STEP41FORF#189T01911PGET(K.F. 3) : TB=1; C#="03L219T255BAGFEDLBCT2"; PRESET (E-8, Q+4); PRES ET (R+7, Q+6) 1006 NEXT: NEXT: RETURN 1010 LV-LV-1: CLB4: PRINT" YOU ARE CAUGHT BY THE GHOST MONSTERS YOU SCORED": BC: " AND YOU GOT ONTO DIFFIC ULTY LEVEL" | DL | (PLAY"LET2029L9EL) BGGGLTEEELBDGE 1020 IFLV<1 THEN GOSUB1320,1110 1030 IF LV>0 THEN PRINTELY2." YOU HAVE "ILV"LIVES LEFT CHOMPING*:FORX=8 TO 2008:NEXT:LK=2: HAPPY G08J8 1348:30T0288 1049 PLAY"L4001E02F03804805A" 1050 IF L=5 THENG.=208:H1=223:G2=11:H2=26:GC=5C+10:RETU 1048 IF L-8 THEN 83-14:H3-31:84-11:H4-29:8C-8C+15:RETUR 1070 L-5 1000 RETURN 1092 L+0: GDSUR 1940 LIDO GOTDASO 1110 FOR E-2 TO 8:FOR M-1 TOLOG: (CLSE:NEXT:PRINT" YO SCORED-" | SC" U HAVE BEEN KILLED AND HIGH SCORE - "HEC"BY "HEST INEXT IF SC >HSC THEN HSC -SC +PLAY"L1802T1C2AB2E03DD2F01C";PRINT" ED TODAYS HIGHEST SCORE! "" 1129 IF HSCHEC THEN INPUT "NHAY IS YOUR NAME"; NM#: HS#-N M#

1138 INPUT "ANDTHER GO(Y/N1??":N# 1148 IF N#="Y" THEN GOTO 118 1158 IF NEOTH" THEN BYOP [168 80T01148 1178 PRINT"SCORE: ghosts SHOST MONSTERS ARE D EADLY BUY IF YOU EAT ANY OF THE FOUR BHOST ARE EATABLE A POWER PELLETS THEN THE WORTH 18POINTS! " 1188 PRINT "BCORF: power pellets"HESE ARE IN EACH CORNER OF THE HAZE . IF YOU EAT ONE THEN A DIFFERENT SOUND IS HEARD THIS MEANS THE GHO MONBTERS ARE EATABLE. POWER PEL LETS ARE WORTH # POINTS 1198 80808 1298 1200 PRINT" SCORE: food FOOD IS YELLOW AND YOU GET IPOINT FOR IT 1218 PRINT "the object of the game; IS TO EAT A LL THE FOOD AND POWER PELLETS WITHOUT GETING ILLED. YOU DWLY HAY 3 LIVES AND IF YOU EAT ALL THE FOOD AND POWER PELLETS YOU START ON AN HARDER LEVEL. AS YOU GET ONTO HARDER": 1228 PRINT " LEVELS YOUR POWER PELLETRUN OUT QU! 100 1238 808091298 1248 DD=11GOSuB 78 1258 PRINT"hyper Jump IF YOU ARE TRAPPED YOU CAN UBE HYPER JUMP TO RETURN YOU TO THE MIDDLE BUT BE WAR NED YOU CAN ONLY USE IT 4 TIMES. 1269 PRINT" PRESS SP ACE BAR ... 1278 IF INKEY# =" " THEN PLAY"LA039"(9070188 1209 0070 1270 1298 PRINT " push-space*bar-to-go-on" : 308 1F INKEYS=" " THEN PLAY"OSLSC": RETURN 1219 GOLO1395 1328 PMODE3,1:8CREENI,8:FDR X=1 TO 208 STEP 19:PLAY"O3L :BTSSEFGCD":CIRCLE(128,96),X,3:NEXT:PLAY"O3LSBTZABBFECD ABGFECABGFEDC" 1330 GOTO 1110 1348 PUT (E,Q)-(R,W),SD 1330 RETURN





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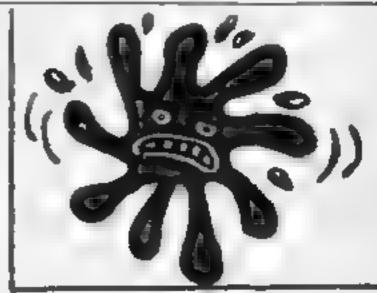
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HCW43

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Top Ten programs for the Spectrum

1 3 4 5 6 7 8 9 10	Atic Atac The Pyramid Chequered Flag Flight Simulation Manic Miner Ant Attack Lunar Jetman Pool Kong Splat	Ultimate (2) Fantasy (3) Psion (1) Psion (9) Bug Byte (7) Quicksilva (4) Ultimate (6) CDS (-) Quean (5) Incentive (8)
10	Spiat	

Compiled by W.H.Smith. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1 Off	t (6)
1 Defender 2 Scramble 3 Asteroids 4 Chess 5 Space Raiders 6 Fantasy Games 7 Invaders 8 Inca Curse 9 ZX81 Forth 10 Maths/Geography	Quicksilva (6) Quicksilva (1) Quicksilva (7) Sinclair (5) Sinclair (9) Sinclair (8) Quicksilva (-) Sinclair (-) Sinclair (-) Sinclair (-)
. –	A Lamakett Al

Compiled by Websters. Figures in brackets are last week's positions

Top Ten programs for the Dragon

1	Mined Out	Quicksilva (3)
2	Pattigrews Diary	Shards (10)
3	Night Flight	Salamander (-)
4	Ring of Darkness	Wintersoft (1)
5	Dragonfly II	Hewson ()
6	Gridrunner	Salamander [-]
7	Champions	Peaksoft (5)
8	Lonheart	Peaksoft (-)
9	Frogger	Microdeal (6)
10	Morocco Grand Prix	Microdeal (-)

Compiled by Websters. Figures in brackets are last week's positions

Top Ten programs for the VIC-20

1 Arcadia 2 Wizerd & the Princess 3 Wacky Waiters 4 Laser Zone 5 Matrix 6 Gridrunner 7 Skyhawk 8 Sargon II 9 Money Manager	Imagine (4) Melbourne House (1) Imagine (2) Llamasoft (-) Llamasoft (10) Llamasoft (-) Quicksilva (5) Commodore (-) Commodore (-) Bug Byte (3)
--	--

10 Panic

Compiled by Websters. Figures in brackets are last week's positions

BEST SELLERS

Top 30

1	Atic Atac	Ultimate	Spectrum ()
2	Lunar Jetman	Ultimate	Spectrum (7)
3	Kong	Ocean	Spectrum (5)
4	Jetpac	Ultimate	Spectrum (2)
5	Manic Miner	Bug Byte	Spectrum (3)
6	The Hobbit	M House	Spectrum (4)
7	Valhal-a	Legend	Spectrum (1)
9	Chuckie Egg	A&F	Spectrum (17)
10	747 Flight		
	Simulator	Doctorsoft	BBC
11	Pool	CDS	Spectrum (16)
12	Melbourne		
	Draw	M House	Spectrum (-)
13	Falcon Patrol	Virgin	CBM 64 (25)
14	Ostron	Softek	Spectrum ()
15	Night Flight	Microdeal	Dragon (-)
16	Killer Gorilla	Program Power	BBC (10)
17	Trans-Am	Ultimate	Spectrum (8)
18	Splat	Incentive	Spectrum (-)
19	Cookie	Ultimate	Spectrum (9)
20	Horace and the		
	Spiders	Psion	Spectrum (13)
21	The King	Microdeal	Dragon (18)
22	Penetrator	M House	Spectrum (22)
23	Hall of theThings	Crystal	Spectrum (14)
24	Cuthbert in the		
	Jungle	Microdeal	Dragon (15)
25	Snooker	Arctic	Spectrum (-)
26	Franklins Tomb	Salamander	Dragon ()
27	3D Dimension		
	Destruction	Arctic	Spectrum ()
28	Crazy Painter	M crodeal	Dragon (-)
29	Pssst	Ultimate	Spectrum (20)
30	3D Combat Zone	Arctic	Spectrum (23)

Compiled by PCS Distribution (0254-691211) and sanctioned by the Computer Trade Association. Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended December 4

Top Ten programs for the Commodore 64

Top Ten programme	Interceptor (8)
1 Crazy Kong 2 Frogger 3 Laser Zone 4 Spriteman 5 Motormania 6 Purple Turtles 7 Quintic Warrior 8 Aquaplane 9 Renaissance 10 Caesar the Cat	Interceptor (1) Liamasoft (-) Interceptor (10) Audiogenic (6) Quicksilva (2) Quicksilva (4) Quicksilva (9) Audiogenic (-) Mirrorsoft (-)

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which both hill the Specifiedes but look out for the spider. The will try to jump on you. For 1 or 2 prayers. Operates with mills leading Joys was of the Keyboard. Grapher 16K The ultimate maze game. Earthe dots out look out for the ghosts they could not you

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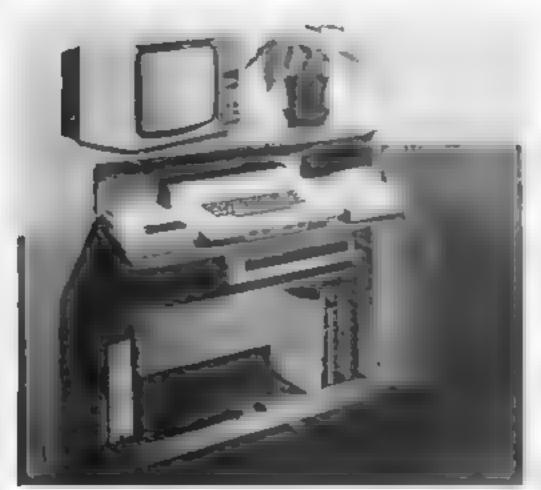
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When will they over learn?

Over at Coleco, things seem to be shaping up rather well. Recently Coleco opened their doors to reporters at their New York manufacturing facilities and showed members of the press how they planned to roll out as many as 140,000 of the new Adam nucro by the end of 1983

Critics of Coleco have stated that the firm's future may be determined by how Adam does in the marketplace.

The Adam is being constructed in two huge buildings, one a converted carpet factory, the other the size of a large uirplane hungar.

There are roughly 50 workers to an assembly line, and lots of assembly lines. Even though many of the workers put in parts by hand which are then manually soldered in place, Coleco states that only about \$50 is spent on labour.

This on a unit that wholesales for about \$525 now with an expected increase to \$650 come January.

About 2,000 units per day are being assembled, with an anticipated increase in that figure to about 6,000 per day by the end of this month. In January, production is anticipated to reach 7,500 units per day, amounting to some 150,000 units per month!

During the tour reporters saw the computers coming off the line at a rate of four per minute. I'll leave you to figure out how many computers per minute need to come off the line to make 150,000 per month.

Approximately 3000 workers are involved in the production of the unit, and about 20 per cent of those are one way or another involved in quality control inspections

Coleco has definitely had to rework some of its suftware and a bit of hardware. The former because it was terrible and the latter because certain parts were unavailable in significant quantities.

Although Coleco officials admitted that a significant number of customers have brought back their units as defective, most of the time the troubles have been traced to the poorly written instructions which accompanied the earlier units.

Even though Coleco seems very serious about manufacturing a good product, when is this industry ever going to learn that users need excellent documentation to avoid turning that wonderful muchine into a very expensive paperweight?

AUXOMINI

Let us all pause for a moment in order to silently voice a farewell to the TI-99/4A.

When that funny looking little box was debuted, it cost a whopping \$1050. What is even more amazing is that they sold a few at that price. I wonder to whom? Or how they feel now?

Anyway, if you are not particularly hip to the home computer scene over here, you might never guess that TI has said bye-bye to the home market. They still have nigh on half a million of the things in warehouses, and boy oh boy do they want to unload.

A friend of mine who has one of the things and knew they weren't being made anymore was still confused as he witnessed one local dealer lower the price on brand new units to \$50, and watched in surprise as one man came in and bought 16 of 'em, then was even more surprised when the very next week the price jumped up to \$150 with a \$50 rebate from T1.

It didn't make a whole lot of sense to me either until I thought about it. It has been advertising the little guy like crazy, with burely a word about going out of the business.

a word about going out of the business.

Let's face it, they can write off the advertising as a cost of doing business, but those computers sitting in the warehouse are nothing but a hability until they are sold, regardless of how much TI does or doesn't make on them. So they raised the price up to fool people.

Not that it matters much. Even for a machine no longer in production, for \$50 it's a steal, and for \$100 it still is a good value. There are oodles of third party vendors now making hardware and software for the machine, so I would not feel too bad if I owned one (unless I paid \$1050 for it)

If I were not out of room I would mention some nice TI compatible products to cheer you up

I have just come into possession of one of the hottest rumours in all of computerdom, which, if it is as credible as it appears to be, explains why the much-announced but delayed IBM PC junior for Peanut as everyone is now calling it) took so long to make it to market

Apparently, it is all due to the folks at Microsoft who are the authors of, among other operating systems, MS-DOS which is called PC-DOS by IBM. The new computer is based on the 80188 microprocessor. Apparently, in what is a clear oversight, some software designer made a routine call to two particular jump vectors out of the available 256 jump vector addresses inside the microchip. Unfortunately, Intel, the maker of the chips, had clearly indicated that those two particular vectors were to be reserved (by Intel) for future use.

If the chips, as made, are not modified, the new IBM computer will not be able to run all those thousands of MS-DOS programs. To avoid that either the new IBM computer would have to be completely re-engineered to use an 8088 (fat chance of that happening), or Intel would have to scrup existing 80188s and reengineer the chip to un-reserve (as it were) those two vectors.

As I write this, I have been unable to determine which chip the new IBM home computer uses, but I can tell you one thing: A lot of

people are upset with Microsoft

Lots are also thinking that the new home IBM is too expensive with its supposed \$525 add-on disc drive unit. Maybe Commodore can do to IBM what it is trying to do to Apple. Imagine an IBM Peanut Compatible computer for \$200 or so, with an add-on drive for only \$300. My rumour source says they could call it the Goober (American slang for peanut).

Ah, the hardware wars are such fun to watch. I'll of course

keep you posted as the situation develops

I just received an excellent catalogue from a mail order firm and left I should pass the information along

It is called The Home Guild Software Buver's Guide and contains 65 full colour pages of software products and accessories for all the well known home nucros. All, of course, offered at discount prices.

What makes this cutalogue so exceptional is that not only is the usual program title and price included, but the firm also includes a paragraph description of what each program does and, through the use of a series of 23 symbols (explained at the beginning of the catalogue) also rates each program.

The rating factors take into consideration format (disc, cartridge, or cassette), peripherals required, user information (level of experience required, age limit, ease of use, hours to learn, and

numbers of players possible).

A special set of symbols is also used to rate program quality in terms of documentation, graphics, educational value, action level, and general enjoyment level. I have never seen a vendor go through so much trouble to produce such a worthy catalogue.

If this were not enough, the first also offers bonus stamps with each purchase. After you accumulate enough bonus stamps, you can then use them instead of cash to purchase any software from the catalogue.

Finally, all software purchased is guaranteed for 30 days against defects and will be exchanged if returned in its original con-

dition with proof of purchase.

The catalogue offers a wide mocture of applications software that will run on the IBM, Atari, VIC-20, Apple, Commodore 64 and TI-99, 4A.

The firm offers a wide range of out-of-the-ordinary programs in addition to the more popular ones. For example, how about Hebrew II Plus (for the Apple) that acts as a text processor and tutor (written right to left of course)? Or know Your Own Personality for the VIC, derived from a book of the same name, written by two psychologists?

If you would like to obtain a copy of this unique catalogue, drop a line to The Hoine Software Guild, P.O. Box 2031, Nashua, New Humpshire 03061-2031. It will be worth your while

See you next week.

Bud Izen Farfield, California

Let your micro keep you up to date

This program will print a calendar month by month, or tell you the day of week of any date you ask

It starts with a menu and you have three options

Option I was ask you for the full date and tell you the day of week for that date

If you enter CONT after it stops, it will proceed to print the calendar of the month on screen (option 2).

After option 2, CONT will send it into printing the whole year calendar on printer (option

To avoid all these, always RUN, in option 2, you can have a nard copy of the calendar by pressing COPY.

Give you the time of day? With Ken Chua's program, your 16K ZX81 will do better than that. It'll tell you the day of the week and give you a monthly — or yearly — calendar



				-	19		
Janu	iary	Wed	Thu	Fri	Sat	Sun	
Mon	Tue	Wen			-7	8	
2	3	4	5	6	14	15	
9	10	11	12	13 20	0.1	22	1
16	17	18	19	_25	28	29	1

How it works

- 10 store for information on day of week of the day before the first day of each month
- 20 names of week days
- 30 names of months
- 40 parameters for the 12 months, used in the calculations of W()
- 50-80 menu
- 220-260 prompting for munth (opt on 2)
- 270-280 prompting for year
- (option 3) 290-310 to detect leap year
- 320-360 to work out the day of
- week of the first day of year 370-410 store the values of W()
- 420 jump if it is not option 1
- 430-440 work out day of week of
- the date
 450-460 print answer for opt on I
- 490 number of days in each
- 500 leap year
- \$10 the 31 days
- 520 14 spaces
- 530 jump if it is option 3
- 540 day of week for first day of month
- 550 Sunday
- 560 number of days in the month
- 570 string for printing the days at correct positions
- 580 columns required for printing the days
- \$90 printing month and year
- 610-670 print calendar of the
- 690-860 print the year calendar on printer

```
1 REM DRY OF WEEK OR CALENDAR
BY KEN CHUA, NOVEMBER 1983.
 10 DIH U(12)
        US="SUNDAY
                        MONDAY
 20 LET
           WEDNESDRY THURSDRY
TUESDAY
         SATURDAY
RIDAY
                        FEBRUARY
 JO LET MS="JANUARY
                      MAY
           APRIL
MARCH
                              SEP
                    AUGUST
         JULY
JINE
                            DECEM
                 NOVEMBER
TEMBER OCTOBER
  40 LET A$="030323233232"
BER
  50 PRINT "YOU MAY CHOOSE 1, 2
  50 PRINT "1: FOR DAY OF THE UEE
3R 3:"
K AT CERTAIN DATE"
  70 PRINT "2: FOR CALENDAR OF CE
TRIN MONTH"
           "3. FOR PRINTING A UHO
  80 PRINT
               CALENDAR ON PAPER'
.E YEAR
 90 FOR I=1 TO 2 STEP 0
 110 If 85="1" OR 8$="2" OR B$="
3" THEN LET I=3
 120 NEXT I
  130 CLS
        B$="2" THEN GOTO 220
  150 IF B$="3" THEN GOTO 270
  140 IF
           "PLEASE ENTER DATE (D
  160 PRINT
D. MM. YYYYY)"
  170 INPUT C$
```

```
D=UAL C$ (1 TO 2)
 190 LET M=UAL C$ (4 TO 5)
 200 LET Y=UAL C$ (7 TO 10)
 210 GOTO 290
220 PRINT
           "UHICH MONTH PLEASE ?
 (MM. YYYY) "
 230 INPUT CS
240
    LET M=UAL C$(1 TO 2)
250 LET Y=UAL C$ (4 TO 7)
260 GOTO 290
270 PRINT "WHICH YEAR PLEASE ?"
S80 INPUT Y
290 IF
        INT (Y/4) #4=Y THEN LET A
1(3)="1"
300 IF INT (Y/100) #100=Y THEN L
t: A$(3)="0"
310 IF INT (Y/400) #400=Y THEN L
T A$(3) ="1"
320 LET Y1=INT ((Y-1) /100)
330 LET Y2=Y-1-100#Y1
340 LET U=799+Y2+INT (Y2/4) +INT
 (Y1/4) -2#Y1
350 LET U=U-INT (U/7) #7
360 IF U=0 THEN LET U=7
370 LET W(1) =U-1
380 FOR I=2 TO 12
390 LET A=U(I-1)+UAL A$(I)
400 LET W(I)=A-INT (A/?) #7
410 NEXT I
420 IF 8$45"1" THEN GOTO 480
430 LET A-D+U(M)
 -40 LET USR INT (R27) #7
```

ZX81 PROGRAM

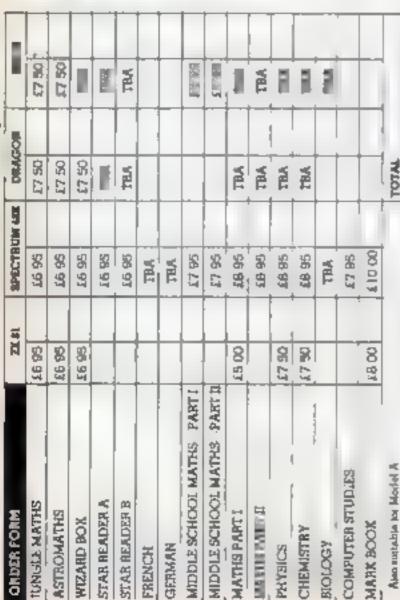
450 PRINT U\$ (10#V+1 70 10#V+10) "FOR "; H\$ (10 # (M-1) +1 TO 10 # (M-1) +10); D; "; Y 490 LET E\$="3128313031303131303 13031" IF A\$(3) ="1" THEN LET E\$(4) 500 510 LFT D\$=" 1 2 3 4 5 6 7 8 91 01112131415161718192021222324252 59726293031 LET 520 IF VAL B\$>2 THEN GOTO 690 530 LET A=1+W(H) 540 THEN LET A= E=VAL E\$ (2#M-1 TO 2#M) A=7 550 F\$=5\$(1 TO 2+A) +D\$(1 TO 560 570 LET 2*E) +5 X=INT ((A+E+6)/7)-1 LET PRINT M\$ (10 * (M-1) +1 TO 580 1-1) +10), TAB 3+X+8; Y PRINT 600 FOR I=0 TO 6 PRINT US (18#1+1 TO 18#1+18) 510 620 FOR J=0 TO X PRINT F\$ (2+ (7+J+I+1) -1 TD 2 630 640 # (7+J+I+1)); 5\$(1); 550 NEXT J PRINT 560 670 NEXT STOP 680 FOR M=1 TO 12 690 LET A=1+U(M) 700 A=? THEN LET R=0 E=UAL E\$ (2+H-1 TO 2+H) IF 710 F\$=5\$(1 TO 2+A)+D\$(1 TO LET 720 730 LET 2 *E) +5\$ X=INT ((A+E+6)/7)-1 LET 740

750 LPRINT M\$ (10 + (M-1) +1 TO 10 + (M-1) +10); TAB 34X+8; Y 770 FOR I=0 TO 6 LPRINT U\$ (10*I+1 TO 10*I+10 780 790 FOR J=0 TO X 500 LPRINT F\$ (2+(7+J+I+1) -1 TO 2+(7+J+I+1)); \$\$(1); 810 NEXT J 850 LPRINT 830 NEXT 340 LPRINT 1984 850 LPRINT 860 NEXT H Sun Sal luary Fri Wed Thu 8 Tue 6 19 20 29 2431 25 26 27 2330

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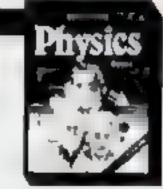
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SOFTWARE REVIEWS

Make your micro ear its keep

If you're tired of playing games, have a look at some of the utility programs on the market. Our reviewers have tried out five of them for you

Quicker Qwerty

Stain ess. Software, 10. Alvione. Road, Stockport, Cheshire SK4

This program is designed to teach you how to type on the TI 99 4A. using all your fingers.

screen and you are told to place your fingers over the "home

keys", with your thumbs over the space bar

A white dot is displayed on one of the keys. This key must be pressed as quick y as possible.

dot is displayed on the keyboard.

several times be are the computer te is you how many mistakes you made and the length of time between key presses

If you made no mistakes, and you didn't take too long between

Profile (What makes you tick?) 32K BBC £5.95

Third Program, 189 Cheedon Road, Taunton, Somerset

Is this a serious utility or a game? I suppose it could be used as both in the right situation, though these are likely to be poles apart!

it is a personality test admin istered by computer and then analysed to present you with a profile of your character

It seems to be based on Eysenck's theory of personality as a balance between extraversion and in reversion on the one hand and accrotic sm and slability on

The theory is well respected by many psychologists but is based on very stringent control of the test and testing situations

I cannot believe, then, that this can be a serious program as it doesn't follow the tests which I know of carefully enough and no norms are available for interprelation

This leaves me with the conclusion that this is meant to be fun-- but who would want to take psychological tests for fun?

I could see it being an interesting talking point at a certain kind of party, but it could lead to a great deal of embarrassment too

So I have to conclude that whilst the program does perform as claimed, I can't see anyone wanting to buy it. D.C.

instructions	Kend o
ease of use	St Pa
disp as	70%
value for money	7(100



T1-99/4A E3

SAH

The keyboard is drawn on the

If you hit the right key, another

This procedure is repeated

key presses, the computer div plays "Well done". This is then followed by another series of keys which must be pressed

The program has 22 levels which are progressed through one after another

Because I takes a long time to complete all the levels, the program can be left and contimued later. This is simply done by entering the level you've

reached at the beginning of the program.

instructions	85%
ease of use	90%
disp ay	800.0
value for money	80a o

大の大の大の大の大

Vu-Type 32K BBC £16.10

British Broadcasting Corpora tion, 35 Marylebone High Street London W1M 4AA

This program is well bred and from noble stock. Commissioned. by he BBC and with exercises by Pitaras, you'd expect a high quality product and it certainly s

The aim is to teach you to touch type and while it hasn't, yet, broken my two fingered habits, it has certainly improved my awareness of their inadequacy

The package contains the main program, over 20 exercises and a 53 page book soo.

In use, the screen displays a representation of the keyboard and the target phrase word or exercise to be typed

As you a tempt to copy the larger the key you should be pressing is illuminated and the letters you have typed appear under the phrase

The program scores you for speed and accuracy and has so many options the mind reels with the possibilities. You can change the display, the sound, the colours, almost everything in

This leads to one of my two. very money artife sors. The number of options is its too vas for anyone o really need Secondly, the program won't teach the layout of text on a page

If you are serious about learn ing to type, you should learn very well with this package and should then be able to go on to learn the other typing skills without too much trouble

ostractions	950,
ease of use	2000
display	91100
value for money	9500
The second second second	_

Tax Calc 32K BBC £17.25

British Broadcasting Corpora tion, 35 Marylebone High Street London WIM 4AA

Subutled The Which? Income Tax Calculator 1982/3' You simply give the program full details of all your income and ourgoings and a will calculate he amount of tax you should have paid for that year

The year you wish to use it for is all-important, though, as the actual details of allowances and percentages are changed at each new budget and the close the program will need updating too

This causes a problem. There is no user registration in this package, and no offer of an update facility

Having paid this amount for a package I would expect to be able to use it more than once -----

If the program needed a tail rewrite due to huge changes in the tax laws, even the offer of a discount on the new version would be better than nothing. This sore of software maintainance is being offered by some companies (Clares & Gemint, for example). so why can't the BBC do the

The program is very easy to use and has excellent documentation which can be used as a preparation sheet to get the intorn actonyou need in the correct order for the program.

Value is difficult to assess, I suppose if you recoup more than its cost from the texman it is good value. But is it tax deductable? D.C.

9500

Helo u

7,14 0

пминененя case of asc Jospian value for money

(4)00

Beyond Basic 32K BBC £11.50 (Cossette) £7.25 (Book)

British Broadcasting Corporation 35 Mary chone High Street, London W1M 4AA

If you have completed your education in BASIC and are ready to step into the realm of machine code then this package could be for you

It is produced as a follow-up to 30 Hour Basic, and like its predecessor, it is extremely well thought out and structured

It is important to realise, however, that it is subtitled '6502 Assembly Language on the BBC Micro', and while it may be of use to owners of other 6502 based machines, it does use the features of the BBC's Assembler and Operating System fairly extensively

It needs to be said that the book is the centre of this package — the tape can't be used without it, and is simply a way of saving time and sore fingers

The book is very good indeed. starting simple and working up towards tu a understanding

It is the first time I have ever felt I understood Binary Coded Decimal and could use it properly, and yet I have three other texts on the subject

Well written, with plenty of exercises to keep the mind nimble, this is a must for those starting on the path to machine

QEPp. instructions 9500 ease of use n a disp av 10000 value for money



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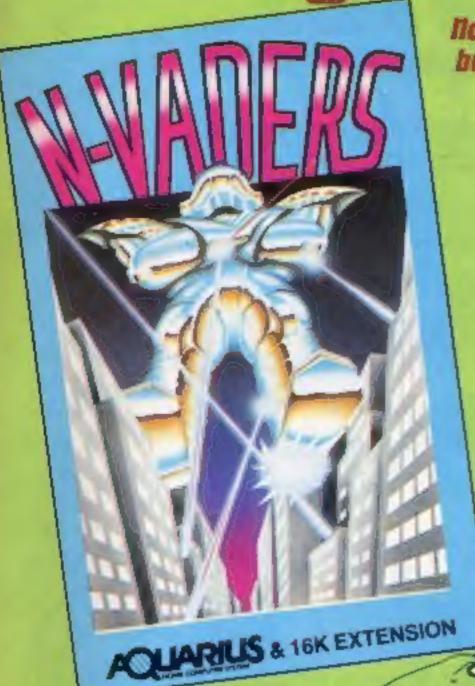
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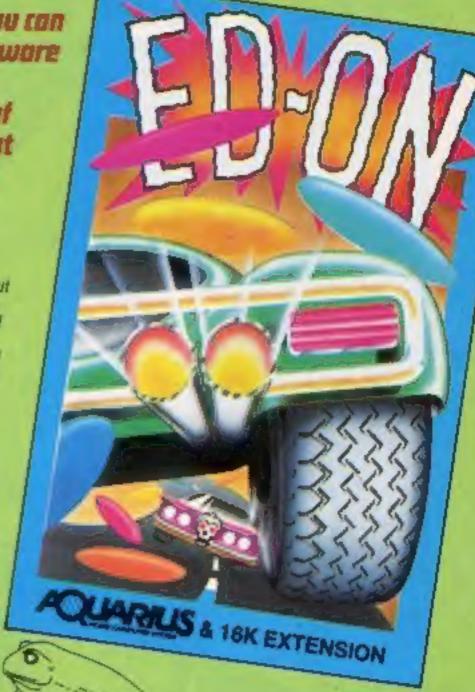


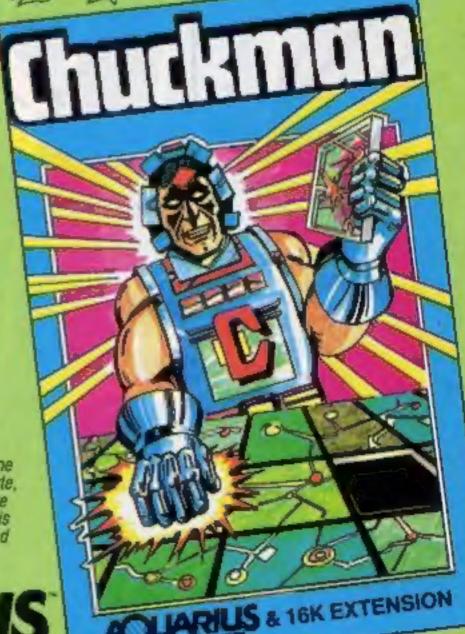
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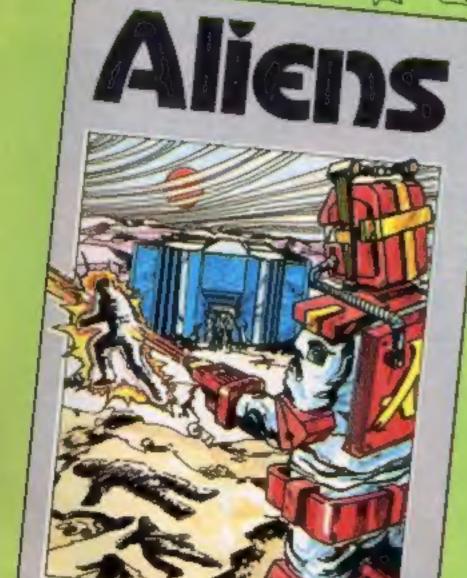
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